Rural Pregnant Women’s Experiences with Substance Use Disorder: A Qualitative Study

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Rural Pregnant Women’s Experiences with Substance Use Disorder: A Qualitative Study

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A Dissertation Submitted to The Graduate School at the University of Missouri-St. Louis in partial fulfillment of the requirements for the degree Doctor of Philosophy in Nursing

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DEDICATION

This dissertation is dedicated to my husband, John, and daughters, Mary and Sally. They have stayed by my side through this entire journey. Without their love and support, none of this would have been possible.
Abstract

Rural pregnant women with substance use disorder (SUD) are an understudied vulnerable population that often experiences poor pregnancy outcomes (Higgins et al., 2019; Jumah, 2016; Kramlich et al., 2018; Shaw et al., 2015). Despite the high prevalence and high burden associated with SUD, rural women are less likely than non-pregnant women to seek addiction treatment and complete an outpatient treatment program during pregnancy (Shaw et al., 2015). This study aimed to give voice to rural Missouri women with SUD. The research questions explored the life experiences and motivations for seeking treatment using a qualitative, descriptive research design with grounded theory methods for data analysis. The research sample consisted of 17 participants from rural Missouri. Semi-structured interviews were audio-recorded using Zoom and analyzed. Four analytic categories were developed from the interview data: (1) onset of use, (2) dynamics of addiction, (3) moods of addiction, and (4) motivating factors. The participants described experiences with SUD from the first time they began using substances through the treatment and recovery process. This group of women began using substances during their teenage years as a way to cope with life-changing events such as death, trauma, abuse, and family problems. The pattern of substance abuse continued as a way to cope with daily life and family problems. Participants described negative thoughts, emotions, and behaviors and the neglect they perceived from healthcare providers during pregnancy. Experiences with incarceration, drug court, and Division of Family Services (DFS) were described. The findings suggest these women have unique healthcare needs, but there is a sense of disengagement from healthcare providers. This type of interaction perpetuates the negative views of self and loss of control that women with addiction may experience. When rural pregnant women with SUD are engaged in recovery, they exhibit a desire to regain their health, fulfill roles as mothers, restore family functioning, and live manageable, meaningful, and satisfying lives. By comparing
the study findings to previous research and self-determination theory, new research questions and policy and practice recommendations were generated.
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CHAPTER 1: INTRODUCTION

Introduction

Rural pregnant women with substance use disorder (SUD) are an understudied vulnerable population that can experience life-threatening and tragic consequences that require specialized treatment and care (Higgins et al., 2019; Jumah, 2016; Kramlich et al., 2018). This population of women often experiences poor pregnancy outcomes (Higgins et al., 2019; Jumah, 2016; Kramlich et al., 2018; Shaw et al., 2015). Despite the high prevalence and high burden associated with SUD, rural women are less likely than non-pregnant women to seek addiction treatment and complete an outpatient treatment program during pregnancy (Shaw et al., 2015). Hearing directly from rural Missouri women with SUD during pregnancy provides a needed voice and develops a new, deeper understanding of what they describe as motivators for seeking treatment (Liener et al., 2021).

The reviewed literature culminated in the state of the science of rural pregnant women’s experiences and available treatment options lends evidence to support the need for qualitative inquiry about (a) their experiences with SUD during pregnancy, and (b) motivating factors that lead them to seek treatment for their addiction. This chapter provides an overview of the proposed study and is organized accordingly: introduction, research questions, researcher perspectives, methods, limitations, summary, and definitions.

Background

Substance abuse has been a known issue since at least the 17th century (Robinson & Adinoff, 2016). SUD is identified as a progressive disease characterized by the use of illicit substances, and/or misuse of legal substances, along with compulsive, risky, and self-destructive behavior patterns that eventually result in social impairment (American Psychiatric Association, 2013; Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013). In 2017, the National
Survey on Drug Use and Health reported only 5% of pregnant and non-pregnant women were diagnosed with SUD (Galvin et al., 2020; Roper & Cox, 2017). Researchers and medical community members recognize this 5% rate is low, indicating underreporting, and therefore is not representative of the actual rate of the population (Galvin et al., 2020).

**Rural**

There is a lack of consensus on a definition of rural (Hundall, 2003). Existing definitions are arbitrary and do not consider all variables, including population density (Hundall, 2003). However, the United States Census Bureau (2010) identifies any population, housing, or territory not in an urban area and with a population of less than 50,000 as rural.

**Rural Pregnant Women**

There is a high prevalence rate of poor pregnancy outcomes for rural women with SUD and their infants (Kr ans & Patrick, 2016). Maternal consequences of SUD are associated with relapse and high-risk behaviors, intravenous drug use, prostitution, and other criminal behaviors (Kr ans & Patrick, 2016). Infants born to women with addiction can have serious health challenges in utero and after birth. These infants can experience prematurity, growth restrictions, low birth weight, neonatal abstinence syndrome (NAS; withdrawal syndrome after birth), and increased hospital stay (Kramlich et al., 2018; Meyer et al., 2012).

Underreporting and failure to screen for substance use during pregnancy call for action (Galvin et al., 2020; Roper & Cox, 2017). Compounding the problem of medical negligence is the fact that a majority of pregnant women do not seek treatment during pregnancy (Galvin et al., 2020; Roper & Cox, 2017). Rural pregnant women are reported to have higher rates of illicit opiate use, benzodiazepine use, and injection drug use in the 30 days preadmission to a treatment facility compared to non-pregnant women (Shannon et al., 2010). It is believed that there are barriers to care, although these barriers are not completely understood (Jumah, 2016).
Substance Use Disorder/Addiction of Rural Pregnant Women

Statistical Data. The Missouri Department of Health and Senior Services (MDHSS) reports alcohol and SUD data per Missouri county separated by gender (MDHSS, 2021). It is difficult to determine the exact numbers of Missouri pregnant women who experience addiction because not all women are screened or seek services. Data encompassing the number of rural pregnant women with SUD in Missouri are not available. However, the MDHSS reported a 42% increase in SUD among pregnant women from 2015 to 2017, with 951 opioid-related maternal deaths in 2017 (MDHSS, 2017). Data from the 2015–2018 National Survey on Drug Use and Health estimates 40% of pregnant women who reported alcohol use during pregnancy also used additional substances (England et al., 2020). It is crucial to know the rates of addiction among rural pregnant women to adequately plan for and address this population’s needs.

Addiction Behaviors. Substance use patterns for rural pregnant women remain widely unknown. However, research has shown a shift in the substances used by rural pregnant women over the years (Shannon et al., 2010; Sloan et al., 1992; Roper & Cox, 2017). The most commonly abused substances among rural pregnant women in the early 1990s were tobacco, alcohol, and marijuana (Sloan et al., 1992). Substance abuse has since evolved, becoming more complex and often resulting in the use of multiple illicit substances (Shannon et al., 2010; Sloan et al., 1992; Roper & Cox, 2017).

Opioid use disorder (OUD), a compulsive prolonged self-administration of opioid substances that has no medical purpose (APA, 2013), has grown substantially over the past few years among rural pregnant women (Gabrielson et al., 2020; Higgins et al., 2019; Jumah, 2016; Kramlich et al., 2018). From 1999 to 2014, the national rates of maternal OUD during delivery increased a striking 333%, from 1.5 cases per 1,000 to 6.5 cases per 1,000 (Haight et al., 2018).
Missouri reported a 42% increase in SUD among pregnant women from 2015 to 2017, with 951 opioid-related maternal deaths in 2017 (MDHSS, 2017).

Addiction Research of Rural Pregnant Women

There is a paucity of research on rural women with SUD during pregnancy. In contrast, many research studies are available that look at pregnant women in urban communities living with addiction (Jumah, 2016; Kozhimannil et al., 2019; Kramlich et al., 2018). A few sources documented what is known about rural pregnant women with SUD (Jumah, 2016; Kramlich et al., 2018; Shaw et al., 2015). According to Shaw et al. (2015), despite the high prevalence and high burden of disease, rural women are less likely to complete an outpatient treatment program during pregnancy. A systematic review of the literature on the management of opioid addiction during pregnancy in rural areas compared the differences between urban and rural settings as well as the treatment offerings to women with addiction during pregnancy (Jumah, 2016). This review of 22 articles concluded there is a need for further understanding about how rural pregnant women with addiction access healthcare (Jumah, 2016). Jumah’s call for further understanding was partially addressed with Kramlich et al.’s (2018) qualitative study that identified logistics, stigma, and judgment as factors that influence rural pregnant women’s access to treatment for addiction.

Specialized Addiction Treatment for Rural Pregnant Women

Facilities must be prepared to handle the complexity of care required for high-risk pregnancies as well as addiction treatment. From 2007–2014, hospital discharge data from the all-payer National Inpatient Sample revealed that approximately 71% of rural women deliver at rural hospitals (Kozhimannil et al., 2019). This is worrisome because rural hospitals may not be adequately equipped with the necessary resources and healthcare providers to care for the critical needs of this patient population. Addiction is more than just a physiological dependence
on a substance; it is an impairment of psychological functioning that must be treated with a comprehensive approach (Hollbrook, 2015; Jumah et al., 2015). Psychological long-term effects may include disrupted maternal-infant bonding and social support systems and an exacerbation of psychiatric symptoms (Hollbrook, 2015). Without adequate access to treatment, rural pregnant women with addiction may experience tragic consequences and poor pregnancy outcomes (Higgins et al., 2019; Jumah, 2016; Kramlich et al., 2018). Healthcare providers need to understand rural pregnant women’s experiences with SUD in particular, as they are four times more likely to face mortality from SUD than the general population of pregnant women (Higgins et al., 2019).

Problem Statement

There are specific maternal and infant health issues for rural pregnant women with SUD. Without proper treatment for their addiction during pregnancy, rural women face a myriad of challenges. At issue is that rural pregnant women with SUD frequently experience challenges when attempting to access addiction treatment (Higgins et al., 2019; Hollbrook, 2015; Jumah, 2016; Kramlich et al., 2018).

Purpose

This qualitative, descriptive research study aims to give voice to rural Missouri women with SUD during pregnancy using grounded theory methods for data analysis.

Research Questions

Research Question 1: How do rural women describe their experiences with SUD during pregnancy and postpartum?

Research Question 2: What are their motivations to seek and remain in treatment?
Rationale

A collection of women’s experiences from first-hand accounts of addiction during pregnancy will provide key information for women with addiction and their support systems, healthcare professionals, researchers, policymakers, and various other constituent groups to consider how addiction treatment is developed, sought, and delivered to this population. Qualitative research as a methodology is helpful to provide clarity of concepts. The development of concepts may lead to the development of a new substantive theory. Additionally, the findings from this research lend evidence to support the need for additional qualitative research for rural pregnant women with addiction.

Significance

Because pregnant women with addiction are classified as high risk during pregnancy, they must have access to specialized prenatal care (O’Connor, 2019; Stone, 2015). Without specialized prenatal care, women with SUD will continue to experience poor pregnancy outcomes due to their unmet healthcare needs. This unique population of women with complicated health care needs relies on evidence-based policies from national, state, and institutional-level agencies (Missouri Department of Social Services [MDSS], 2018; Dopp et al., 2020; Guille et al., 2020; Krans & Patrick, 2016; Centers for Disease Control and Prevention [CDC], 2021a).

Substance Use Disorder/Addiction of Rural Pregnant Women

The literature is clear. SUD among rural pregnant women is a cause for substantial public health concern (Dombrowski et al., 2016; Galvin et al., 2020; Hansen & Moloney, 2019; Jumah, 2016; Kramlich et al., 2018; Shaw et al., 2015). The addiction treatment needs of pregnant women are unique compared to the needs of non-pregnant women (Jumah, 2016; Kozhimannil et al., 2019; Kramlich et al., 2018). Pregnant women with SUD encounter serious
stigma and judgment from their healthcare providers, families, and communities and face specific feelings of guilt, shame, and embarrassment (Jumah, 2016; Kozhimannil et al., 2019; Kramlich et al., 2018). These women have an honest fear that their children will be taken away because they are viewed as not having the requisite qualities to parent adequately (Kramlich et al., 2018). Rural pregnant women with addiction want to stop their addiction; however, they require access to treatment and the help of trustworthy and respectful healthcare providers.

**Specialized Addiction Treatment for Rural Pregnant Women**

Rural pregnant women with addiction have unique treatment care needs. Special attention must be given to developing and delivering accessible treatment programs and interventions that meet the specific needs of rural women with addiction during pregnancy (D’Aunno et al., 2017; Morelli et al., 2001; Ryland & Lucas, 1996; Samuelsson, 2015). Previous research has shown that pregnant women attempting to access addiction treatment frequently meet significant challenges, including distance to travel, lack of transportation, financial burden, limited treatment options, insufficient provider expertise, childcare issues, and fear of existing children being removed from the home (Higgins et al., 2019; Jackson & Shannon, 2012a; Jackson & Shannon, 2012b; Jumah, 2016; Kramlich et al., 2018; Meyer & Phillips, 2015). Culturally responsive treatment programs that take gender and stigma into account hold promise to improve rural pregnant women’s addiction treatment experience (Jumah, 2016; Kramlich et al., 2018; Kozhimannil et al., 2019).

**Childcare.** Women who are allowed to keep their children with them during treatment have greater recovery success rates than women who are not able to have their children with them during treatment (Morelli et al., 2001). Treatment facilities must consider childcare as necessary for a positive treatment outcome for these women (Morelli et al., 2001).
**Punitive Treatment.** For this vulnerable population of women, the fear of having their children removed from the home is real. SUD during pregnancy is a punishable crime that can result in the mother losing custody of her newborn and any other children. Many states view substance use during pregnancy as inflicting harm to the unborn child and other children involved; women with addiction may face arrest, prosecution, or conviction (O’Connor, 2019; Stone, 2015).

Fear is reason enough for women to avoid prenatal visits and treatment for their addiction. Efforts to impose negative consequences and penalize women for seeking addiction treatment during pregnancy result in harmful pregnancy outcomes (Krans & Patrick, 2016). Healthcare providers should advocate for health policy informed by scientific research and evidence-based practice to optimize healthcare outcomes for mothers and infants (Krans & Patrick, 2016).

**Healthcare Providers**

Healthcare providers and policymakers are challenged to decrease the barriers to addiction treatment during pregnancy in rural communities. Providers require enhanced education and understanding about perinatal addiction treatment (Kramlich et al., 2018). Many healthcare providers admit to having a lack of knowledge regarding SUD, screening instruments available, and how to properly use the screening instruments (Logan et al., 2003; Meyer & Phillips, 2015; Ondersma et al., 2019). Rural pregnant women may receive more adequate treatment for their disease if the process of addiction and addiction treatment were better understood.
Researcher Perspective

This researcher has an extensive clinical background in maternal-child nursing and women’s health and has provided care for many postpartum women with SUD and infants with NAS. This clinical experience has provided a sound foundation of first-hand experience, knowledge, and insights into the challenges faced by women with access to healthcare and treatment for addiction. The experience has also provided an understanding of the importance of removing all judgment when working with this clientele. This researcher has the expertise, motivation, and skills necessary to complete the proposed research study.

Methods

This qualitative research study gave a needed voice to rural women with SUD during pregnancy and developed a new, deeper understanding of what they describe as motivators for wanting treatment. Hearing directly from rural women will provide key information for healthcare providers and state and local government officials to consider how addiction treatment is developed and delivered to this special population of women.

This research study used a qualitative, descriptive research design and grounded theory methods for data analysis. Purposeful sampling was used for participant recruitment. Participants were selected based on specific inclusion criteria, including being pregnant or up to 5 years postpartum, residing in rural Missouri, and receiving treatment for addiction during pregnancy. The research sites for this study included substance use treatment facilities and women’s shelters throughout rural Missouri. Semi-structured interviews were scheduled for 1 hour and were audio/video recorded using Zoom according to the participant’s written consent. Data analysis began immediately after the first interview. The data were thoroughly reviewed, coded, and analyzed using grounded theory methods.
Limitations

Study limitations include limiting the research to a singular type of data (semi-structured interviews). This method of data collection provides valuable information, but additional methods of data collection such as focus groups, storytelling, chart reviews, and/or surveys would strengthen the study results. Due to the time constraints for the completion of this study, the idea of gathering multiple sources of data was eliminated. Data on attendance in public meetings such as Alcoholics Anonymous (AA) or Narcotics Anonymous (NA) were not included. Having this information may have provided more insight into the availability of resources for rural Missouri women with SUD. Data included women with at least one living child. Having more first-time pregnant participants with no living children may have changed the interview data regarding the motivating factors for seeking and remaining in treatment. Lastly, data on mental health issues were unknown. Having this information may have led to more informed data comparisons.

Summary

The insights and first-hand knowledge received from this research are necessary to advance healthcare and addiction treatment services in rural communities serving pregnant women. The identification of barriers to treatment and motivations for follow-through will provide much-needed evidence for practice. The findings can be used to develop training and continuing education for healthcare providers. To effectively partner with pregnant women who have SUD, healthcare providers must have evidence-based knowledge and understanding of the process of addiction.

Engagement in addiction recovery means women are beginning and staying in treatment. With continued engagement, they may regain their health, be more equipped to fulfill desired roles as mothers, restore family functioning, and manage their lives in ways that
are meaningful and satisfying. With support systems in place, hope in recovery can become a reality for rural women with SUD during pregnancy.

Chapter 2 will culminate in a state of the science literature review of rural pregnant women’s experiences and available treatment options, lending evidence to support the need for qualitative inquiry. Perspectives regarding the science of SUD and/or addiction will be reviewed for historical context. Self-determination theory (Deci & Ryan, 2002) with its focus on competence, relatedness, autonomy, and motivation, will be described as the theoretical frame for the study. This study used grounded theory methods for data collection and analysis. Chapter 3 describes the research methodology in detail, inclusive of the research design, population, sample, setting, and data collection and analysis. Chapter 4 is a presentation of the data findings. The four major categories, subcategories, properties, and dimensions are discussed. Finally, Chapter 5 includes a discussion of the key findings and comparisons to the literature. Chapter 5 also includes limitations, implications for future research, practice, policy, and this researcher’s next steps.

Definitions

1. **Addiction** is defined as “a chronic, relapsing disorder characterized by compulsive drug seeking and use despite adverse consequences,” (NIDA, 2021, p. 4).

2. **Substance use disorder** (SUD) is identified as a progressive disease characterized by the use of illicit substances, and/or misuse of legal substances, along with compulsive, risky, and self-destructive behavior patterns that eventually result in social impairment (APA, 2013; Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013).

3. **Recovery** “is a process of change through which people improve their health and wellness, live self-directed lives, and strive to reach their full potential” (SAMSHA, 2021).
4. **Relapse** is defined as “a transition toward regression in the process of recovery, which is prompted by a return to a previous behavior of substance use, despite the intention to remain abstinent” (Moon & Lee, 2020, p. 523).

5. **Infant** is a child aged 0 to 12 months.

6. **Pregnant** is the condition of pregnancy in which a female has an embryo, fetus, or baby growing in her uterus.

7. **Pregnancy** is a physiologic state of a woman that follows implantation of a blastocyst or blastocysts (formation of the embryo; The American College of Obstetricians and Gynecologists, 2021).

8. **Prenatal** refers to the period of time occurring before birth.

9. **Perinatal** is the time period occurring immediately before and immediately after giving birth.

10. **Postpartum** is the period of time immediately following birth and lasting up to 6 months.

11. **Healthcare providers** are the healthcare team caring for the pregnant woman during pregnancy and postpartum, including physicians and nurses.
CHAPTER 2: REVIEW OF LITERATURE

Introduction

Rural pregnant women with SUD are one of the most vulnerable populations. They face unique challenges that lead to a continuum of pregnancy and addiction outcomes described in this chapter. Pregnancy outcomes can be grouped into events that affect the woman and ones that affect the newborn. Women may experience physical health deterioration and medical complications. Newborns may be born early and/or suffer from effects of prematurity, develop NAS, and may need prolonged hospitalization. Addiction outcomes may include a disruption of maternal-infant bonding, social and family relationships, relapse, high-risk behaviors, and psychiatric comorbidities.

In preparation to conduct a qualitative, descriptive research study that examines pregnant women’s experiences with SUD and treatment, search terms were generated by starting with the population and problem of interest. From this initial search of the terms, “rural,” “pregnant,” and “addiction,” the term “perinatal” was added because there was little research that specifically examined addiction in pregnancy. Because SUD and addiction are used interchangeably in the literature, both terms were searched. Finally, treatment interventions, barriers to addiction treatment, and addiction policy were examined for contextual understanding. This review culminates in the state of the science of rural pregnant women’s experiences and available treatment options, lending evidence to support the need for qualitative inquiry about (a) their experiences with SUD during pregnancy and (b) the motivating factors that lead them to seek treatment for their addiction.

Changing terminology and perspectives regarding the science of SUD and/or addiction will be reviewed for historical context. Next, studies are presented in a table of evidence as they relate to rural pregnant women’s experiences with SUD. Finally, self-determination theory, with
its focus on competence, relatedness, autonomy, and motivation, will be described as the theoretical framework for the study.

**Historical Context**

Addiction was first identified during the 17th century (Robinson & Adinoff, 2016). The scientific classification of SUD began around the 19th century (Robinson & Adinoff, 2016). SUD is a progressive disease defined as the use of illicit substances and/or misuse of legal substances characterized by compulsive, risky, and self-destructive behavior that eventually results in social impairment (APA, 2013; Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013). The evolution of addiction treatment in the United States began with alcoholism in 1784 (K., 2019). Dr. Benjamin Rush, a pioneer in the U.S. medical community, suggested that alcoholism is a disease that should be treated (K., 2019). Rush was committed to educating the public about the dangers of excessive alcohol intake. Through his work, he recognized that alcoholism is intergenerational. His work led to the beginning of the temperance movement (K., 2019), which was an organized movement to limit or outlaw the consumption of alcohol in the United States (Levine, 1984).

**Unfolding of Addiction Recognition**

**Housing.** In the early 1800s, the first lodging homes opened. Sometimes referred to as “inebriate homes” (Talchekear, 2020), they provided short-stay, temporary housing for people to undergo detoxification in a non-medical environment. In the late 1800s, these temporary homes began to close, forcing those suffering from alcoholism to a hospital or asylum. In 1901, the first hospital for patients with substance use opened in New York City (Talchekear, 2020). By the early to mid-1900s, alcohol was no longer the only substance understood to be abused. Other drugs such as morphine and other narcotics were added to the list of abused substances.
Alcoholics Anonymous (AA) and Narcotics Anonymous (NA). In the early to mid-1900s, AA and NA were formed. AA was founded in 1935 by Bill Wilson, Ebby Thatcher, Rowland Hazard, and Dr. Bob Smith (Talchekar, 2020). Wilson and Smith began meetings separate from Thatcher and Hazard (Talchekar, 2020). Wilson and Smith are the authors of the famous “blue book,” Alcoholics Anonymous, published in 1935. NA was founded in 1953 by James Patrick Kinnon to help members stop abusing addictive substances (NA, 2021).

Alcoholism the Disease. By the mid-1900s, the American Medical Association (AMA) had recognized alcoholism as a disease. The AMA defined alcoholism as a “primary, chronic disease with genetic, psychosocial, and environmental factors influencing the condition’s prognosis” (Morse & Flavin, 1992, p. 1012). From the mid-1960s through the mid-1990s, substance use received a great deal of attention, beginning with a response from policymakers that led to the insurance industry’s reimbursement for the treatment of alcoholism.

Effects of SUD. Maternal consumption of alcohol during pregnancy can lead to extensive negative and toxic effects on fetal development, including physical, cognitive, and neurobehavioral disabilities referred to as fetal alcohol spectrum disorder (FASD; Brown et al., 2019; Ornoy & Ergaz, 2010; Stevens et al., 2020). Infants with FASD may experience physical symptoms of growth deficiencies and facial malformations as well as cognitive and neurobehavioral disabilities such as problems with learning, attention, social interaction, and higher rates of psychiatric disorders (Brown et al., 2019; Stevens et al., 2020).

Methadone. Methadone is a synthetic opioid agonist approved by the Federal Drug Administration (FDA) for the treatment of OUD and pain management (SAMHSA, 2021a). Methadone was first introduced in 1964 for the treatment of heroin addiction (Robinson & Adinoff, 2016). Since this time, methadone has gained popularity in treating prescription opioid abuse due to its prescribed treatment of chronic pain (Robinson & Adinoff, 2016).
Methadone is considered the gold standard of care for the treatment of OUD during pregnancy and is associated with decreasing the severity of NAS (Jumah et al., 2015). Access to this medication for rural women proves challenging. The provider is required to have a special license to prescribe methadone (Higgins et al., 2019; Hollbrook, 2015; Jumah et al., 2015; Meyer & Phillips, 2015). In addition, most of the methadone clinics are located in urban communities, leaving rural women with little access (McCarthy et al., 2020).

**Buprenorphine.** Buprenorphine is a partial opioid agonist with lowered risk of fatal overdose (Meyer & Phillips, 2015). Buprenorphine is a safe and effective alternative to methadone for the treatment of opioid addiction in pregnant women (Hollbrook, 2015; Meyer & Phillips, 2015). Unlike methadone, buprenorphine does not require the prescribing provider to have a special license (Higgins et al., 2019; Hollbrook, 2015; Jumah et al., 2015; Meyer & Phillips, 2015). Even though buprenorphine is more readily available, rural pregnant women still experience limited access to this treatment option.

**Methamphetamine.** Methamphetamine (MA) is a highly addictive central nervous system neurotoxic stimulant derivative of amphetamine (Cruickshank & Dyer, 2009; Harding et al., 2022; Marcela et al., 2019; National Institute on Drug Abuse [NIDA], 2019; Paulus & Stewart, 2020; Perez et al., 2021; Zhang et al., 2021). In the early 20th century, MA was commonly used for the treatment of fatigue, weight loss, respiratory congestion, and attention deficit–hyperactivity disorder (ADHD; NIDA, 2019; Perez et al., 2021). MA is the only illegal substance that can be created using commonly purchased over-the-counter cough and cold medication containing pseudoephedrine (Marcela et al., 2019; Perez et al., 2021). The U.S. Congress passed the Combat Methamphetamine Epidemic Act in 2005, which requires pharmacies and retail stores to keep a log and limit the daily purchases of products containing pseudoephedrine (NIDA, 2019; United States Department of Justice, 2006). Significant challenges persist for the
treatment of MA abuse. Currently, there are no medications available to counteract the effects of MA; behavioral therapies have shown to be the most effective treatment (NIDA, 2019; Paulus & Stewart, 2020; Perez et al., 2021).

MA use can cause serious health problems in pregnant women and their infants. The use of MA is associated with an excessive release of neurotransmitters (dopamine, serotonin, and norepinephrine) that lead to a variety of physical (Harding et al., 2022) and psychiatric health concerns, including hallucinations, delusions, paranoia, anxiety, and depression (Marcela et al., 2019; Paulus & Stewart, 2020; Perez et al., 2021). These symptoms, inclusive of psychosis, may endure for months to years during recovery (Grant, 2007; NIDA, 2019; Paulus & Stewart, 2020; Perez et al., 2021). Physical health complications are brought about because of vasoconstriction, which can lead to a variety of cardiovascular-related maternal complications such as increased cardiovascular activity, myocardial infarction, hypertension, and stroke (Marcela et al., 2019; Maya-Enero et al., 2018; NIDA, 2019; Paulus & Stewart, 2020; Perez et al., 2021).

Prenatal MA exposure can have adverse effects on fetal development (growth restrictions and low birthweight), birth outcomes (preterm birth and fetal death), brain development (reduced growth and structural changes), and neurodevelopment (cognitive and motor skills; Marcela et al., 2019; Perez et al., 2021; Zang et al., 2021). Particular concern includes unfavorable fetal brain and neurodevelopment that can present long-term effects for the infant exposed to MA in utero (Marcela et al., 2019; Perez et al., 2021; Zang et al., 2021). In recent studies of children up to 15 years of age, those with intrauterine MA exposure were found to have an increase in aggressive behaviors, inattention, impulsivity, ADHD, poor school performance, and lower IQ (Perez et al., 2021; Zang et al., 2021).
The Controlled Substances Act. The Federal Comprehensive Drug Abuse Prevention and Control Act of 1970, commonly known as the Controlled Substances Act, divided substances into classifications based on the substance’s medical use or potential for abuse and dependency (Robinson & Adinoff, 2016). This act was amended with a new bill in 1999, The Drug Addiction Treatment Act (Talchekear, 2020). This act placed stricter requirements on practitioners who dispense narcotics (Robinson & Adinoff, 2016; Talchekear, 2020). The Affordable Care Act (ACA) expanded coverage for addiction treatment in 2010 by requiring insurance companies to provide coverage for behavioral health services and substance abuse treatment (Robinson & Adinoff, 2016; Talchekear, 2020). The expansion of insurance coverage for addiction treatment services increases the availability of treatment opportunities and lends to more affordable services.

Terminology. Over the years, the Diagnostic and Statistical Manual of Mental Health Disorders (DSM) has implemented changes in terminology and pathological and physiological criteria of the Abuse and Dependence categories (Robinson & Adinoff, 2016). The term addiction was deliberately omitted from the DSM-III and DSM-IV editions but was reinstated in the DSM-V (Rosenthal & Faris, 2019). Reasons given for the omission included that the term was a layperson’s term, it was too difficult to define, it could be stigmatizing, and that too many meanings existed (Rosenthal & Faris, 2019). The DSM-V reintroduced the term addiction under the category label “Substance-Related and Addictive Disorders” (APA, 2013; Rosenthal & Faris, 2019). Addiction and SUD encompass a progressive multidimensional disease process characterized by the use of illicit substances, misuse of legal substances, and compulsive, risky, and self-destructive behavior that eventually results in social impairment and disruption of functioning (APA, 2013; Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013).
Much of the literature on addiction and pregnancy is related to women residing in urban communities. Less is known about the experiences of addiction and treatment for women in rural communities. Substance use during pregnancy is an important public health concern that can have significant and persistent adverse consequences for both mother and infant.

The following sections provide a review of the literature and the associated concepts and issues relating to rural women with SUD during pregnancy.

**Rural Communities**

Nationally, rural women die of pregnancy-related causes at a more significant rate than urban women (Hansen & Moloney, 2019). Specific reasons for this phenomenon remain largely unknown. Nevertheless, multiple risk factors including chronic illness and substance abuse are associated with negative maternal outcomes (Hansen & Moloney, 2019). Rural pregnant women with addiction are an understudied vulnerable population with specific and important health needs currently not met (Jumah, 2016; Kramlich et al., 2018; Sloan et al., 1992).

**Definition**

**Rural.** There is a lack of consensus on a definition of rural (Hudnall, 2003). Existing definitions are arbitrary and do not consider all variables, including population density (Hundall, 2003). The United States Census Bureau (2010) identifies any population, housing, or territory, not in an urban area with a population of less than 50,000 as rural.

**Literature About Rural**

**Urban vs. Rural.** The literature about rural drug use overall is minimal at best. Much of the literature is deeply rooted in looking at drug use in urban populations (Dombrowski et al., 2016). The type of treatment, interventions, and care in urban communities may be ineffective in rural communities (Dombrowski et al., 2016). There is a need to develop a better understanding of the substance use patterns and habits of rural women with SUD.
**Harmful Effects.** There is an urgent need for a greater understanding of drug abuse in rural communities. The harms of SUD are extensive and can include contracting viruses and sexually transmitted diseases as well as mental, social, and family health disruption (Dombrowski et al., 2016). Appropriate addiction treatment interventions predicated on such understandings are essential to the health outcomes of rural women and their infants.

**Shift in Behaviors of SUD.** The literature is clear; SUD among rural pregnant women is a cause for a substantial public health concern (Dombrowski et al., 2016; Galvin et al., 2020; Hansen & Moloney, 2019; Jumah, 2016; Kramlich et al., 2018; Shaw et al., 2015). Little is known about the substance-using habits and patterns of rural women; more is known about urban women and their substance use during pregnancy (Sloan et al., 1992). However, it is known that there has been a shift in the patterns of substance use over time that includes more opiate use during pregnancy in rural communities (Jumah, 2016). Reasons for the shift in opioid use from urban communities to rural populations are partially explained by the lower costs associated with intravenous drug use (Jumah, 2016).

**Rural Missouri Research.** The prevalence rate of substance abuse during the early pregnancy of women residing in rural Missouri was studied using urine specimens (Sloan et al., 1992). Over 10 months, 181 urine samples were collected from pregnant women attending their first prenatal care visit at a local rural clinic. The specimens were screened for amphetamines, barbiturates, benzodiazepines, cocaine, opiates, marijuana, nicotine, and alcohol. The sample participants were not aware that their urine was being tested for substance use or that they were part of a research study. The results demonstrated that most women were honest when reporting alcohol and nicotine use during pregnancy but were not forthcoming with information about illicit drug abuse (Sloan et al., 1992).
**Healthcare Providers.** Findings reported by the National Survey on Drug Use and Health (NSDUH) determined only 5% of pregnant and non-pregnant women received a clinical diagnosis of SUD in 2017 (Galvin et al., 2020), reflecting underreporting. Healthcare providers must do a better job of screening pregnant women for substance use during pregnancy. The results of these research studies confirm that reliance on self-reporting of information is not a reliable method for data collection when seeking information about the significance of substance use rates among pregnant women. The addition of routine substance use screening during prenatal care visits could positively impact the health outcomes of both mother and infant.

**Rural Hospitals.** From 2007 to 2014, hospital discharge data from the all-payer National Inpatient Sample revealed that approximately 71% of rural women deliver at rural hospitals (Kozhimannil et al., 2019). This is worrisome because rural hospitals may not be adequately equipped with the necessary resources and healthcare staff to care for the critical needs of this patient population. Rural pregnant women with SUD have complex needs for multidimensional support, inclusive prenatal services, perinatal and hospital-based services, and postpartum care. Without adequate access to treatment, rural pregnant women with SUD may experience tragic consequences and poor pregnancy outcomes (Higgins et al., 2019; Jumah, 2016; Kramlich et al., 2018).

**Perinatal Period**

There is a high prevalence rate of poor pregnancy outcomes for women and their infants who are affected by SUD (Krans & Patrick, 2016). Self-reporting methods from this population of women regarding their experiences with SUD are not reliable. Healthcare providers must do a better job of screening for substance use early in the perinatal period.
Explanation of Table 1

Several screening instruments are available to healthcare providers that are specifically used to detect substance use during pregnancy. Table 1 lists the three most commonly used instruments, including the name, description, format, and who can administer them. The description column explains how many questions comprise the instrument, the intended use, any special training requirements, and the sensitivity and specificity.

Sensitivity and Specificity. Sensitivity and specificity are measures used to describe the validity of an instrument or test (Swift et al., 2020). These two measures are inversely proportional, meaning that as one of the proportions percentage rises, the other proportions percentage will decrease. A higher sensitivity will yield a lower specificity, and vice versa (Swift et al., 2020). Sensitivity is the proportion of true positives that have been correctly identified by the test, and specificity is the proportion of true negatives that have been correctly identified by the test (Swift et al., 2020). A test with a high sensitivity rating yields few false-negative results, and a test with a high specificity rating yields few false-positive results (Swift et al., 2020).

Screening Instruments

Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST). This instrument screens all populations for alcohol, tobacco, and a variety of other illicit substances and is not specific to pregnant women. The screening instrument’s eight questions are repeated for each substance mentioned and a score is assigned. This screening instrument provides specific risk scores and classifies patients into low, moderate, or high categories to guide intervention recommendations (Gryczynski et al., 2015; Humeniuk & Ali, 2006). The World Health Organization (WHO; 2014) reports rates of alcohol sensitivity (67%) and specificity (36%) and cannabis sensitivity (100%) and specificity (20%); other illicit substances are not mentioned (See Table 1).
The sensitivity of 67% for alcohol is explained as the ASSIST test correctly identified 67% of the people who used alcohol but missed 33% of the people who used alcohol. The ASSIST test failed to detect 33% of the people who used alcohol; this is referred to as a false negative. The specificity of 36% for alcohol is explained as the ASSIST test correctly identified that 36% of the people did not use alcohol, but misidentified 64% of the people. This results in an explanation of 64% of the group will be identified as having used alcohol when they did not use alcohol; this is known as a false positive.

The cannabis sensitivity of 100% means the ASSIST test was 100% accurate in detecting who used cannabis. The cannabis specificity of 20% correctly identified that 20% of the people did not use cannabis, but misidentified 80% of the people using cannabis; this is a false-positive result of 80% identified as having used cannabis.

**4P’s Plus.** This five-question screening instrument was developed specifically for the use of pregnant women with SUD (Chasnoff et al., 2007; Coleman-Cowger et al., 2019). The instrument focuses on social issues specific to women, unlike the ASSIST and SURP-P screening instruments. This instrument is highly sensitive at 87% with a specificity of 76% (Chasnoff et al., 2007; Coleman-Cowger et al., 2019; WHO, 2014; see Table 1).

**Substance Use Risk Profile- Pregnancy (SURP-P).** The use of this three-item screening instrument is simple and flexible to assess for substance use during pregnancy. This instrument is used to score high- and low-risk populations (Ondersma et al., 2019; WHO, 2014; Yonkers et al., 2010). This instrument is highly sensitive with low-risk populations (80% to 100%), demonstrates a moderate to high sensitivity with high-risk populations (48% to 100%), and has a moderate specificity rating with low-risk populations (61% to 64%), and high specificity with high-risk populations (84% to 86%; WHO, 2014; see Table 1).
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Format</th>
<th>Who and When Administered</th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol, Smoking, and Substance Involvement</td>
<td>Eight items</td>
<td>Interview</td>
<td>Trained interviewer (medical or non-medical provider)</td>
<td>Alcohol:</td>
<td>Alcohol:</td>
</tr>
<tr>
<td>Screening Test (ASSIST)</td>
<td>Screens for tobacco, alcohol, and other substances</td>
<td></td>
<td></td>
<td>67%</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>Requires interviewer training;</td>
<td></td>
<td></td>
<td>Cannabis:</td>
<td>Cannabis:</td>
</tr>
<tr>
<td></td>
<td>five items</td>
<td></td>
<td></td>
<td>100%</td>
<td>20%</td>
</tr>
<tr>
<td>4P’s Plus</td>
<td>Intended to facilitate discussion about substance use. Questions focused on</td>
<td>Paper and pencil</td>
<td>Medical and non-medical providers</td>
<td>87%</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>parents, partners, past, and pregnancy.</td>
<td></td>
<td>Inpatient and outpatient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Use Risk Profile-Pregnancy (SURP-P)</td>
<td>Does not require special training;</td>
<td>Paper and pencil</td>
<td>Medical and non-medical providers</td>
<td>Low risk:</td>
<td>Low risk:</td>
</tr>
<tr>
<td></td>
<td>three items</td>
<td></td>
<td></td>
<td>80-100%</td>
<td>61–64%</td>
</tr>
<tr>
<td></td>
<td>Used to detect substance use</td>
<td></td>
<td></td>
<td>Low risk:</td>
<td>Low risk:</td>
</tr>
<tr>
<td></td>
<td>among high- and low-risk populations</td>
<td>Prenatal clinic</td>
<td></td>
<td>48-100%</td>
<td>84–86%</td>
</tr>
</tbody>
</table>

Chasnoff et al., 2007; Coleman-Cowger et al., 2019; National Institutes of Health, 2021; Ondersma et al., 2019; WHO, 2014; Yonkers et al., 2010.
Lack of Healthcare Provider Knowledge

Many healthcare providers admit to having a lack of knowledge regarding SUD, screening instruments available, and how to properly use the screening instruments (Logan et al., 2003; Meyer & Phillips, 2015; Ondersma et al., 2019). There is significant room for improvement towards offering healthcare providers the education they need regarding the risks, screening instruments, and treatment available for rural pregnant women with SUD. A lack of provider understanding towards evidence-based treatment for perinatal OUD is a contributing factor to drug-related pregnancy-associated and pregnancy-related deaths in rural communities (Bryan et al., 2020). Without adequate treatment, maternal SUD is associated with adverse perinatal outcomes (Bryan et al., 2020).

Maternal and Infant Effects of Substance Use

Maternal Effects. Early detection of substance use during pregnancy will decrease the negative effects for both mother and infant. Infants born to women with SUD can have serious health challenges in utero and after birth (Krans & Patrick, 2016). Many research studies analyze the effects of substance use on infants. Few research studies have focused on the maternal effects of SUD (Krans & Patrick, 2016). Maternal consequences of SUD are associated with relapse and high-risk behaviors such as intravenous drug use, prostitution, and other criminal behaviors (Krans & Patrick, 2016).

Maternal alcohol use during pregnancy can have short-term and long-term effects for the infant, including physical health challenges, deficits in cognitive functioning, behavioral problems, poor academic performance, and long-term employment difficulties (Logan et al., 2003). Alcohol use during pregnancy can result in devastating consequences for the mother, such as increased frequency of medical complications and mental health problems (Logan et al.,
2003). Rural women are more likely than urban women to report the use of multiple substances, which leads to complex healthcare needs for both mother and infant (Dworkin et al., 2017).

**Infant Effects.** Infants born to mothers with addiction can experience prematurity, growth restrictions, low birthweight, NAS, and increased hospital stay (McQueen et al., 2015; Meyer et al., 2012; Kramlich et al., 2018). NAS is a serious and devastating opioid withdrawal syndrome infants experience after birth. A chart review of 131 mother-infant pairs evaluated the prevalence of NAS associated with a variety of substances used during pregnancy to determine if NAS symptoms varied (McQueen et al., 2015). The results revealed a high prevalence rate of NAS in infants who were primarily exposed to opioids during pregnancy. Additionally, the research found that infants exposed to methadone experienced more severe NAS symptoms as evidenced by a higher peak in NAS scores, prolonged NAS treatment, and extended hospital stay (McQueen et al., 2015). Infants exposed to substances such as cannabinoids, cocaine, benzodiazepines, and barbiturates had significantly lower NAS scores (McQueen et al., 2015).

**Substance Use Disorder/Addiction**

**Understanding SUD/Addiction**

**Addiction Process.** The disease process of addiction is not readily understood. Failure to fully understand addiction has posed challenges and debate for scientists, healthcare providers, philosophers, communities, families, and individuals since the early years of addiction research and discovery (Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013; Sussman & Sussman, 2011). It is suggested that rural pregnant women would receive more adequate treatment for their disease if there was a better understanding of the process of addiction. Women with SUD want to stop their addiction; however, they require reliable and trustworthy addiction services.
**Forms of Addiction.** The term *addiction* is difficult to understand and define. Addiction takes on many forms and meanings such as substances (illegal and legal), gambling, sex, work, food, shopping, and gaming (Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013). For this research, substances are the focus. Addiction is distinguished by the various types of addiction. There is not a one-size-fits-all definition for addiction. Nevertheless, for this research, the term *addiction* is used simultaneously with SUD. As previously stated, SUD is a progressive disease defined as the use of illicit substances and/or misuse of legal substances characterized by compulsive, risky, and self-destructive behavior that eventually results in social impairment (APA, 2013; Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013).

Addiction knows no boundaries. The disease of addiction occurs across all countries, races, religions, socioeconomic status, genders, age groups, and education levels (Sinnott-Armstrong & Pickard, 2013). Individuals with SUD experience a combination of cognitive, behavioral, and physiological symptoms despite significant substance-related problems (APA, 2013).

Despite a strong desire and effort to stop their addiction, rural women face challenges from the strength of the disease. The strength of the disease is so powerful that it will not let women with addiction achieve sobriety alone. Women with addiction require support and guidance offered by their healthcare providers. They require healthcare providers who are knowledgeable about the treatment of addiction. Additionally, with insufficient knowledge about the disease of addiction, achieving sobriety is not an easy feat for this vulnerable population of women.
**Identifying Effects of Addiction**

**Compulsiveness.** The compulsive behavior of addiction can be explained as a loss of control. The individual who lives with addiction typically does not realize they have lost control or that challenges in their lives are a result of their addiction. The disease of addiction is known for clouding reality, causing the individual with an addiction to have a false sense of real-world situations. Family and friends are aware of their loss of control behavior by observations that include disregard for work, family, play, and even basic self-care (Foddy, 2010; Hatterer, 1982; Sussman & Sussman, 2011). The addicted individual’s compulsiveness can be characterized by four distinct behaviors that are easily identifiable (Foddy, 2010).

1. **Insensitivity to the cost of the substances used.** The desire or craving for these substances is so strong the individual who lives with addiction will go to any lengths to ensure they have their substance, even if this results in depleting their family’s money, forcing them to go without necessities.

2. **Regret.** They often regret their substance use but fail to reduce or stop using. Individuals who live with addiction continue to use substances despite statements that they want to stop.

3. **Strong uncontrollable desires.** The disease has a significantly strong hold on them, making it difficult to stop using.

4. **Compulsive behaviors.** Research has identified that their actions are the result of actual neurological process changes found in the brain (Foddy, 2010). People do not choose to become addicted. Conversely, research supports there are particular causes and psychodynamics that precipitate addiction, including ethnic, family, genetic, and environmental factors (Hatterer, 1982).
Legal Punishment. Addiction is a disease identified by a neurological change in the brain and is not a chosen way of life. Much debate remains about whether moral and legal punishment should exist for acts committed by the individual when under the influence of their disease (Foddy, 2010; Kramlich et al., 2018). Many states view substance use during pregnancy as inflicting harm to the unborn child and other children involved. Depending on the state, substance use during pregnancy is a punishable crime that will result in the removal of the newborn and/or all children from the home. Missouri does not consider substance use during pregnancy a punishable crime (SAMHSA, 2014). However, substance use during pregnancy is considered a crime in other states; women often face arrest, prosecution, or conviction (Stone, 2015; O’Connor, 2019). Most of the women in the U.S. criminal justice system are facing nonviolent charges (O’Connor, 2019), and 82% of them are dependent on either drugs or alcohol. Nearly 6% of the women are pregnant at the time of their arrest, which results in approximately 9,430 pregnant women in prison across the United States at any given time (O’Connor, 2019).

Fear. A qualitative research study revealed that 22 of 30 participants reported being afraid they would be identified as using substances during their prenatal visits, voiced fear of losing custody of their newborns and/or their children, and would have to face the criminal justice system (Stone, 2015). The remaining participants reported not feeling afraid because they were not using illegal substances; instead, they were using nicotine, alcohol, and prescription medications. One participant said she knew about other women who used illegal drugs during their pregnancy and were never caught because they did not attend prenatal care visits. Another participant said she thought being honest was the best policy. She believed if you were honest about your substance use and received treatment then the legal system and healthcare providers would believe you were serious about quitting and wanting the best for
the baby (Stone, 2015). These statements confirm that women with addiction during pregnancy are fearful of going to jail or losing their children. It is suggested that if women with addiction did not live in such fear they would experience more positive pregnancy outcomes. They would not be afraid to attend prenatal care visits and would be honest about their substance use.

Pregnant women with addiction continue to be a public health and legal system concern. Rural pregnant women have high-risk and complex health care needs and requirements that cannot be met within the legal system. Their fears of having their children taken away are real. They are viewed as not having the requisite qualities to parent adequately (Kramlich et al., 2018). Pregnant women are one of the most vulnerable populations in our society. Without adequate knowledge about the disease of addiction, pregnant women will continue to face incarceration caused by their disease. Additionally, pregnant women with addiction will not receive the necessary healthcare needed to care for themselves and their unborn babies. Pregnant women with addiction are classified as high-risk during pregnancy, making access to specialized prenatal care essential (Stone, 2015; O’Connor, 2019). Policy changes must be made so pregnant women with addiction can receive the treatment necessary for their addiction. Labeling them as criminals and removing their children from the home does not aid in their recovery efforts.

Discussion of Table 2: Evidence Table

Table 2 shows the various types of research conducted in the population of rural pregnant women. This table includes both qualitative and quantitative research studies. A substantial amount of the literature is comprised of comparison research studies that include urban and rural populations of pregnant women with addiction. Two comparison research studies are outlined in Table 2. Additional studies include research methods of
qualitative/quantitative study, systematic review, nonrandomized control trial, ethnography, retrospective pre-experimental design, and random sampling.

**Elements of Table 2.** The elements of this table were selected based on the evidence-based practices outlined by Fineout-Overholt et al. (2010), a step-by-step approach of assigning hierarchal evidence to research studies. The research studies presented in this table were reviewed for the following elements: author/year, purpose, sample, instruments/data collection methods, intervention details as applicable, findings, limitation, and level of evidence. The assigned level of evidence is dependent on the study design: systematic review or meta-analysis (Level I), randomized controlled trial (Level II), controlled trial without randomization (Level III), case-control or cohort study (Level IV), a systematic review of qualitative or descriptive studies (Level V), qualitative or descriptive study (Level VI), and expert opinion or consensus (Level VII) (Fineout-Overholt et al., 2010).
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<thead>
<tr>
<th>Author, Year</th>
<th>Purpose</th>
<th>Sample</th>
<th>Instruments/Data Collection Methods, Intervention Details as Applicable</th>
<th>Findings</th>
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</table>
| Bryan et al. (2020) | Describes a study protocol targeted at developing and evaluating a perinatal OUD curriculum, enhancing evidence-based perinatal OUD treatment in a rural setting, and evaluating the implementation of collaborative care. | 2 Levels of participants:  
**Level 1:** Community healthcare providers  
**Level 2:** Patients (pregnant women with OUD) residing in two rural communities in Utah. | Providers: Evidence-Based Practices and Attitudes Scale (EBPAS), SBIRT Attitudes and Perceptions (SAP-1) Questionnaire, and Alcohol and Alcohol Problems Perceptions Questionnaire (AAPPQ).  
Pregnant Women with OUD:  
**Assess Substance Use:**  
Adverse Childhood Experience (ACE), The Alcohol Use Disorders Identification-Concise (AUDIT-C),  
| Findings not yet available; study is ongoing.  
Plan to use descriptive statistics, \( t \)-tests and chi-square tests, and qualitative data. Qualitative analysis will be analyzed using the Rapid Identification of Themes from Audio Recording (RITA). | Designed for a specific rural community, which may limit generalizability; is a single-arm trial with no control group requiring the use of evaluation through an implementation framework (RE-AIM). | V |
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<tr>
<th>Author, Year</th>
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<td></td>
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<td></td>
<td>The Diagnostic and Statistical Manual 5 (DSM-5) OUD Checklist, The Fagerstrom Test for Nicotine Dependence (FTND), Drug Abuse Screening Test (DAST).</td>
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<td>Assess Mental Health: Edinburgh Postnatal Depression Scale (EPDS), Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), Kessler Psychological Distress Scale (K6), 12-Item Short Form Survey (SF12).</td>
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<td>Satisfaction:</td>
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<td>Author, Year</td>
<td>Purpose</td>
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<td>Galvin et al. (2020)</td>
<td>Comparison of regional (rural) patients vs. Buncombe County patients (urban) attending Project CARA (comprehensive)</td>
<td>Regional (R) patients (n= 324) Buncombe County (BC) patients (n=284)</td>
<td>Satisfaction Questionnaire Short Form (PSQ-18), Treatment Services Review-6 (TSR-6). <strong>Data Collection Methods to be Used:</strong> 2-year study, one group, repeated measures, hybrid type 1 effectiveness-implementation design. Delivering interventions at 2 levels of participants.</td>
<td>Engagement in care outcomes for both groups were not significantly different except for attendance of postpartum visits: BC: 46 (64.6%) R: 110 (49.8%) <em>P</em> value: 0.002</td>
<td>Lack of outcomes data for patients who did not establish care or left treatment. Multiple between-group comparisons</td>
<td>IV</td>
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<td>Author, Year</td>
<td>Purpose</td>
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<td>perinatal substance use treatment program); looked at engagement in prenatal care and percentage of those diagnosed with SUD.</td>
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<td>Diagnosed with SUD comparison is significant ( P = 0.009 ); diagnosis is greater with R group and less in BC group: Polysubstance: R: 53 (16.4%) BC: 45 (15.8%)</td>
<td>may have resulted in spurious findings.</td>
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<td>Opioids: R: 209 (64.5%) BC: 162 (57%) Amphetamine/methamphetamine: R: 25 (7.7%) BC: 13 (4.6%)</td>
<td>Only one treatment program used; may limit generalizability for other programs.</td>
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<td>Cocaine: R: 8 (2.5%) BC: 15 (5.3%)</td>
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<td>Alcohol: R: 9 (2.8%) BC: 7 (2.5%)</td>
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<td>Cannabis:</td>
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<td>Guille et al. (2020)</td>
<td>Comparison of maternal and newborn outcomes among pregnant women with OUD receiving care via telemedicine vs. in person.</td>
<td>Pregnant women (n= 98)</td>
<td>Nonrandomized controlled trial; logistic regression with propensity score</td>
<td>No statistically significant differences were found after propensity score weighting in rates of retention in treatment (in person (80.4%) vs. telemedicine (92.7%); treatment effect, –12.2% (95% CI, –32.3% to –4.4%). Similar results were found in newborns with NAS (in person (63.2%) vs. telemedicine (45.4%); treatment effect –17.8% (95% CI, –41.0% to 8.9%).</td>
<td>Most ideal study with this group would have been a randomized clinical trial to reduce the potential for selection bias.</td>
<td>III</td>
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<td>Jackson &amp; Shannon (2012b)</td>
<td>Explore barriers for rural pregnant women seeking short-term detox</td>
<td>Rural pregnant women undergoing short-term detox</td>
<td>Qualitative interviews and quantitative data</td>
<td>Over 80% reported experiences with barriers to treatment.</td>
<td>Small sample size.</td>
<td>VI</td>
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- R: 19 (5.9%)
- BC: 38 (13.4%)
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<tr>
<td>Jumah (2016)</td>
<td>Describes existing evidence for the management of substance use in rural pregnant women.</td>
<td>22 total articles</td>
<td>A systematic review of the literature</td>
<td>Literature does not define rural. Shortage of addiction medicine providers in rural settings. Few articles on polysubstance abuse, gender issues, or understanding the role of stigma. Accessibility and availability were identified as the two most prevalent barriers to treatment in rural opioid-addicted pregnant women.</td>
<td>Most of the studies were observational; not able to draw strong conclusions.</td>
<td>I</td>
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<td>substance abuse treatment.</td>
<td>inpatient treatment (n= 85)</td>
<td>Completion of the Health Services Research Questionnaire and The Addiction Severity Index. Face-to-face interviews over 4 days</td>
<td>4 qualitative categories emerged as barriers to treatment: Availability (26%) Accessibility (49%) Affordability (13%) Acceptability (51%)</td>
<td>recruitment of participants.</td>
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<tr>
<td>Kramlich et al. (2018)</td>
<td>Understand the experiences of accessing care for SUD recovery, pregnancy, and parenting.</td>
<td>Rural women (n=13) &lt;br&gt; Counties in the northeastern U.S. (n=7)</td>
<td>Ethnography</td>
<td>3 domains w/ underlying themes: &lt;br&gt; 1. challenges of getting treatment and care &lt;br&gt; 2. Bonding &lt;br&gt; 3. Importance of relationships</td>
<td>Recruitment challenges &lt;br&gt; Selection bias &lt;br&gt; Limited observational periods &lt;br&gt; Data collection limited to the inpatient setting</td>
<td>VI</td>
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<tr>
<td>Paterno et al. (2020)</td>
<td>Generate effect sizes of preliminary program outcomes and identify areas of improvement for women with OUD enrolled in the Engaging Mothers for Positive Outcomes with</td>
<td>Postintervention: mother-newborn couplet (program participants, n=19) &lt;br&gt; Preintervention: mother-newborn couplets; randomly selected and received care before program launch (n = 19)</td>
<td>Retrospective, pre-experimental design</td>
<td>The postintervention group may have had more positive outcomes than the preintervention group. &lt;br&gt; Breastfeeding initiated: postintervention group: 18 (947%) and preintervention group: 14 (73.7%; Fisher exact test: $P = 0.180$, Cramer’s phi = 0.289; not significant with small effect size)</td>
<td>Little ethnic diversity &lt;br&gt; Small sample size &lt;br&gt; Risk of type 1 error due to multiple statistical tests conducted</td>
<td>II</td>
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<td>Author, Year</td>
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<td>Early Referrals (EMPOWER)</td>
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<td>Neonatal abstinence syndrome (NAS) diagnosis: postintervention group: 11.4 (8.6%) and preintervention group: 7.1 (6.4%; Fisher exact test: $P = 0.660$, Cramer’s phi $= -0.144$; not significant with small effect size)</td>
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<tr>
<td>Shaw et al. (2015)</td>
<td>Examined rural and urban differences of substance-abusing mothers enrolled in the Parent-Child Assistance Program (PCAP) in Washington State.</td>
<td>Women enrolled in PCAP (n = 773)</td>
<td>Longitudinal comparison study</td>
<td>Rural women reported more alcohol and marijuana use than urban women. Alcohol use: ($P \leq 0.05$) Rural= 74% Urban= 61% Marijuana use: ($P = 3.18$, not significant) Rural= 68% Urban= 58% Rural women were less likely to complete outpatient substance use treatment and overall used</td>
<td>Participant self-report for intake and exit interviews.</td>
<td>Data analysis included 57% of the initial sample size due to participant attrition. Significant disproportion of groups sample size; rural participants accounted for 12% of the total sample.</td>
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<td>Sloan et al. (1992)</td>
<td>Determine the prevalence of substance use during the early pregnancy of women from rural Missouri by anonymously collecting and testing urine samples</td>
<td>Rural Missouri women (n= 181)</td>
<td>Random sampling</td>
<td>Several urine specimens were positive for the following substances: Nicotine: 83 (46%) Marijuana: 17 (9.4%) Cocaine, barbiturates, ethanol, benzodiazepines: 1 (0.6%)</td>
<td>Completion of outpatient treatment: (p= ≤ 0.01) Rural= 78% Urban= 89%</td>
<td>Limited to one state, which resulted in less ethnic diversity of the participant population.</td>
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<td>Several participants reporting drug use: Nicotine: 83 Ethanol: 27 Marijuana: 3 Benzodiazepines: 0 Cocaine: 1</td>
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<td>Limited to only one state and institution.</td>
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fewer services compared to urban women.
Treatment Interventions

Pregnant women with SUD encounter serious stigma and judgment from their healthcare providers, families, and communities (Kramlich et al., 2018). Women with addiction are faced with specific feelings of guilt, shame, and embarrassment (Jumah, 2016; Kramlich et al., 2018; Kozhimannil et al., 2019). The addiction treatment needs of pregnant women are unique compared with the needs of non-pregnant women and must include a multipronged approach (Jumah, 2016; Kramlich et al., 2018; Kozhimannil et al., 2019).

Addiction is more than just a physiological dependence on a substance; it is an impairment of psychological functioning that must be treated with a comprehensive approach (Hollbrook, 2015; Jumah et al., 2015). Psychological long-term effects may include disrupted maternal-infant bonding and social support systems and an exacerbation of psychiatric symptoms (Hollbrook, 2015). Therefore, comprehensive women-centered treatment programs that are supportive and nonjudgmental and that include individual psychotherapy, cultural/spiritual care, and pharmacological care are necessary (D’Aunno et al., 2017; Hollbrook, 2015; Jumah et al., 2015; Marsch & Dallery, 2012; Morelli et al., 2001; Ryland & Lucas, 1996; & Samuelsson, 2015).

Education Intervention

Treatment interventions for pregnant women with alcoholism are focused on early education and abstinence programs before pregnancy (Brown et al., 2019; Ornoy & Ergaz, 2010; Stevens et al., 2020). There has been a paucity in the literature since the late 1990s demonstrating success in reducing alcohol consumption during pregnancy (Ornoy & Ergaz, 2010). Therefore, the literature suggests education programs as an intervention to decrease alcohol use during pregnancy were not effective (Brown et al., 2019; Ornoy & Ergaz, 2010).
Attention given to other SUD may be a reason for the gap in research (Brown et al., 2019; Ornoy & Ergaz, 2010).

**Program Intervention**

Despite the high prevalence and high burden of disease, rural women are less likely to complete an outpatient treatment program during pregnancy (Shaw et al., 2015). Logistics, stigma, and judgment are potentially some of the reasons rural pregnant women do not access treatment for addiction during pregnancy (Kramlich et al., 2018). Therefore, experts in the field have implemented a variety of care interventions to help pregnant women with addiction. Rural women with SUD want to stop their addiction; however, they require the help of trustworthy and respectful healthcare providers.

**Harm Reduction Intervention**

Harm reduction is defined as a reduction in the frequency and/or amount of substance use by an individual (Benoit et al., 2014). Harm reduction intervention is a common treatment option for individuals with addiction. Conversely, this intervention option is not recommended for pregnant women (Benoit et al., 2014; Wright et al., 2012). The effects of substance use even when reduced are still harmful, resulting in poor pregnancy outcomes for both mother and infant (Benoit et al., 2014; Wright et al., 2012).

**Types of Care Interventions**

**Collaborative Care.** There are not enough healthcare providers in rural communities to provide addiction treatment (Higgins et al., 2019; Hollbrook, 2015; Jumah et al., 2015; Meyer & Phillips, 2015). Collaborative care treatment models and interventions that cater to the special needs of this distinct population of women are desperately needed. Particular attention must be given to pregnant women with addiction and their unique addiction treatment care needs (D’Aunno et al., 2017; Morelli et al., 2001; Ryland & Lucas, 1996; Samuelsson, 2015). In
particular, there are very few inpatient treatment facilities that allow the children to remain with their mothers. Women who are allowed to keep their children with them during treatment experience greater recovery success rates than women who do not have their children with them during treatment (Morelli et al., 2001). A total of 21 inpatient participants discovered that having their children with them in a nonpunitive environment was vital to the success of their recovery (Morelli et al., 2001). The literature supports positive treatment outcomes occur when women are allowed to keep their children with them during addiction treatment (Morelli et al., 2001). Consideration for addiction treatment reform is vital to the recovery from addiction of rural pregnant women with SUD.

**Pilot Study.** A pilot study recently implemented by Bryan et al. (2020) aims to develop and evaluate an evidence-based perinatal OUD education curriculum for healthcare providers and patients (pregnant women with OUD). The goal of the education program is to enhance perinatal OUD treatment, implement collaborative care in rural communities in Utah, and assess changes in participants across time (Bryan et al., 2020). This 2-year pilot study is comprised of one group, repeated measures, hybrid type 1 effectiveness-implementation design. A hybrid type 1 effectiveness-implementation design primarily focuses on testing clinical interventions with a secondary focus to explore the implementation-related factors (Landes et al., 2019; Shadish et al., 2002). This type of design is selected to elicit an explanation for both the effectiveness and implementation outcomes (Landes et al., 2019). Additionally, a hybrid type 1 effectiveness-implementation design aims to explore how well an intervention may be implemented (Landes et al., 2019). The research team chose this single-arm design instead of implementing an experimental or quasi-experimental design because of time and resource constraints (Bryan et al., 2020). A single-arm study design is considered a simple design in which
participants are given the intervention and followed over time to evaluate their response (Landes et al., 2019; Shadish et al., 2002).

**Instruments.** Participants were asked to complete a series of self-reported and interview-administered questionnaires. Healthcare providers completed surveys adapted from the Evidence-Based Practices and Attitudes Scale (EBPAS; assesses provider attitudes and perceptions towards adopting new interventions); Screening, Brief Intervention, and Referral to Treatment (SBRIT) Attitudes and Perceptions (SAP-1) Questionnaire (assesses competency regarding substance use screening, intervention, and referral); and Alcohol and Alcohol Problems Perceptions Questionnaire (AAPPQ; assesses attitudes towards serving individuals with substance use; Bryan et al., 2020). Patient participants were assessed by completing questionnaires regarding substance use, mental health, general health, and satisfaction. A total of 14 instruments were completed by the patient participants that address the concepts and research questions of this study. The instruments used are individually outlined and described below.

**The Alcohol Use Disorders Identification-Concise (AUDIT-C).** This screening instrument is used as a frequency measure of alcohol consumption. The concise AUDIT instrument consists of three questions that were adapted from the original 10-question AUDIT instrument (Dawson et al., 2005). The questions focus on the frequency of alcohol consumption and are scored on a zero to 12 scale (zero reflects no alcohol use; Dawson et al., 2005). Scoring is on a continuum; a higher test score reflects alcohol use that is most likely affecting the individual’s health and safety (Dawson et al., 2005). Scoring is divided into categories of low risk (0-2), moderate risk (3-5), high risk (6-7), and severe risk (8-12). The AUDIT-C instrument has a high sensitivity (82.6%) and specificity (81.3%) reliability rating (Dawson et al., 2005).
**The Diagnostic and Statistical Manual 5 (DSM-5) OUD Checklist.** This checklist from the DSM-5 is comprised of 11 yes/no questions that determine an OUD diagnosis and the severity level of the diagnosis (CDC, 2021b; APA, 2013; Tarrahi et al., 2015). The questions focus on the scoring of symptoms (abuse, dependence, cravings, and withdrawal), which are determined by the number of yes/no responses. The presence of at least two yes responses indicates a diagnosis of OUD. Results are unaffected (0-1), mild (2-3), moderate (4-5), and severe (≥6; Tarrahi et al., 2015). Reliability and validity are not specified.

**The Fagerstrom Test for Nicotine Dependence (FTND).** The FTND assesses the intensity of nicotine addiction (NIDA-CTN, 2021; Pomerleau et al., 1994). The six-item questionnaire evaluates three elements of use: the quantity of consumption, compulsion, and dependence. Scoring is determined by the number of yes/no items (0-1), and multiple-choice questions (0-3; Pomerleau et al., 1994). The scored items are added together for a score of 0-10, from no dependence (0) to the highest dependence (10; NIDA-CTN, 2021). Acceptable internal consistency reliability (Cronbach’s alpha = 0.64) has been established (Pomerleau et al., 1994).

**Drug Abuse Screening Test (DAST-10).** This 10-item yes/no screening instrument yields a quantitative degree of consequences related to drug abuse (NIDA-CTN, 2021; Yudko et al., 2007). Scoring is on a continuum from 0-10. A yes response receives 1 point, and a no response receives zero points (Yudko et al., 2007). If item 3 (“Are you always able to stop drugs when you want to?”) receives a no response, 1 point is given. Scoring reveals the degree of problems related to drugs: no problem (0), low level (1-2), moderate level (3-5), substantial level (6-8), and severe level (9-10; NIDA-CTN, 2021). High internal consistency reliability (Cronbach’s alpha = 0.94) has been established (Yudko et al., 2007).

**Edinburgh Postnatal Depression Scale (EPDS).** The EPDS is a useful screening instrument to test for depression following childbirth (Cox et al., 1987). Each of the 10 items is
focused on feelings over the past 7 days (Cox et al., 1987). Responses are presented in a variety of patterns similar to, but not limited to, “yes, very often,” “yes, sometimes,” “sometimes,” “no, not at all,” “hardly ever,” and “never” (Cox et al., 1987). Item scoring is determined from response categories (0, 1, 2, and 3), and items with an asterisk are reverse scored (3, 2, 1, and 0), with a threshold score of 12/13 (women above this score are likely suffering from depression; Cox et al., 1987). This postnatal depression screening instrument has a high sensitivity (86%) and specificity (78%) rating (Cox et al. 1987). Additionally, this instrument is sensitive to changes in the severity of depression over time (EPDS-1 [first interview] mean score = 15.8, EPDS-2 [second interview] mean score = 9.8, t =3.72, P = 0.002; Cox et al., 1987).

**Patient Health Questionnaire-9 (PHQ-9).** This 9-item questionnaire is used to determine depression severity (Kroenke et al., 2001). Scores can range from zero to 27; each item is given a score of zero (not at all) to 3 (nearly every day; Kroenke et al., 2001). The sum of all nine items represents the severity of an individual’s depression: minimal (1-4), mild (5-9), moderate (10-14), moderately severe (10-19), or severe (20-27; Kroenke et al., 2001). The questionnaire demonstrates high sensitivity and specificity beginning with scores of 9 and higher and ending with scores of 15 and higher. A score of 9 has 95% sensitivity and 84% specificity; 10: 88% sensitivity and 88% specificity; 11: 83% sensitivity and 89% specificity; 12: 83% sensitivity and 92% specificity; 13: 78% sensitivity and 93% specificity; 14: 73% sensitivity and 94% specificity; and 15: 68% sensitivity and 95% specificity (Kroenke et al., 2001). Depending on the cut score, the positive predictive value of the PHQ-9 ranges from 31% to 51% (Kroenke et al., 2001).

**Generalized Anxiety Disorder-7 (GAD-7).** This 7-item instrument is used as a measure for anxiety in the general population (Lowe et al., 2008). Response options are “not at all,” “several days,” “more than half the days,” and “nearly every day” (Lowe et al., 2008). Items are given a score of either 0, 1, 2, or 3, with a score ranging from 0 to 21 (Lowe et al., 2008). Levels
of anxiety are determined by a greater than or equal to cut score: mild (5), moderate (10), and severe (15; Lowe et al., 2008). Internal consistency reliability (Cronbach’s alpha = 0.89) has been established (Lowe et al., 2008).

**Kessler Psychological Distress Scale (K6).** This 6-item scale assesses the frequency of nonspecific psychological distress used as a quick instrument to assess the risk of severe mental illness (Staples et al., 2018; Prochaska et al., 2012). Responses and scores range from “none of the time” (0) to “all of the time” (4); items are summed for a total score range of 0 to 24 (Staples et al., 2018; Prochaska et al., 2012). Internal consistency reliability (Cronbach’s alpha = 0.89), sensitivity (36%), and specificity (96%) have been established (Staples et al., 2018; Prochaska et al., 2012).

**12-Item Short Form Survey (SF-12).** This is a 12-item survey measure of both physical and mental health including eight domains (Larson, 2002; Ware et al., 1996). The survey generates two separate scores (Physical Component Summary and Mental Component Summary) ranging from zero to 100; a higher score indicates less dysfunction, impairment, or pain (Larson, 2002; Ware et al., 1996). The SF-12 contains categorical yes/no responses as well as Likert responses that assess limitations (limited to a lot, limited a little, not limited at all), pain (not at all, a little bit, moderately, quite a bit, and extremely), and overall health (excellent, very good, good, fair, and poor (Larson, 2002; Ware et al., 1996). Relative validity estimates for the SF-12 achieved multiple R-squares of 0.911 to 0.918 (Ware et al., 1996).

**Adverse Childhood Experience (ACE) Questionnaire.** This is a 10-item questionnaire to measure exposure to emotional, physical, and sexual abuse and dysfunctional households during childhood (Felitti et al., 1998). ACE is comprised of seven categories with yes/no responses (Felitti et al., 1998). Scores range from unexposed (0) to exposed to all categories (7;
Felitti et al., 1998). High internal consistency reliability (Cronbach’s alpha = 0.88) has been established (Felitti et al., 1998).

**5-Item Primary Care PTSD Screen for DSM-5 (PCPTSD-5).** This is a 5-item measure that reflects the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) criteria for posttraumatic stress disorder (PTSD; Prins et al., 2016). The PCPTSD-5 includes a yes/no response format with scores ranging from zero to 5: very comfortable (1) to very uncomfortable (5; Prins et al., 2016). This instrument has a high degree of sensitivity (99% to 56%) and specificity (67% to 97%) based on scoring intervals (Prins et al., 2016). Additionally, the PCPTSD-5 demonstrates excellent diagnostic accuracy results (area under the curve [AUC] = 0.941; 95% confidence interval [CI]: 0.912 to 0.969; Prins et al., 2016). AUC is a measurement of accuracy; this instrument’s high AUC represents its high performance (Prins et al., 2016).

**30-Item Parenting and Family Adjustment Scale (PAFAS).** This is a 30-item outcome measure that assesses changes in parenting practices and parental adjustments in the evaluation of both public and individual or group parenting interventions (Sanders et al., 2014). Each item is written as a 4-point Likert scale from “not true of me at all” (0) to “true of me very much” (3); some items receive reverse scoring (Sanders et al., 2014). Items are summed, with higher scores indicating higher levels of dysfunction (Sanders et al., 2014). Internal consistency reliability was divided into two sections: PAFAS Parenting (18 items) and PAFAS Family Adjustment (12 items). These two sections added together represent the 30-item PAFAS scale (Sanders et al., 2014). The coefficients for PAFAS Parenting were parental consistency (0.70), coercive parenting (0.78), positive encouragement (0.75), and parent-child relationship (0.85) and for the PAFAS Family Adjustment were parental adjustment (0.87), family relationship (0.84), and parental teamwork (0.85; Sanders et al., 2014). All results indicate very good internal consistency (Sanders et al., 2014).
**Patient Satisfaction Questionnaire Short-Form (PSQ-18).** This 18-item questionnaire assesses weaknesses within the healthcare system as seen through the eyes of the patient (Thayaparan & Mahdi, 2013). Items are on a 5-point Likert scale to determine how strongly a patient agrees or disagrees, from strongly agree (1) to strongly disagree (5; Thayaparan & Mahdi, 2013). Internal consistency reliability of the five subscales using Cronbach’s alpha were general satisfaction (0.75), technical quality (0.74), interpersonal manner (0.66), communication (0.64), financial aspects (0.73), time spent with the doctor (0.77), and accessibility and convenience (0.75; Marshall & Hays, 1994).

**Treatment Services Review-6 (TSR-6).** The TSR-6 is an extensive instrument used to obtain information about healthcare services received by patients contained in 12 sections: administrative, demographic, living situation, alcohol and drug, medications, medical, psychological, family, employment/financial/housing, legal, other services, and summary (Cacciola et al., 2008). The summary section consists of six Likert scale items that assess to what extent the patient believes the services received focus on each problem section (alcohol and drug, medications, psychological, family, employment/financial/housing, and legal; Cacciola et al., 2008). Overall, the TSR-6 is comprised of 130 item pairs, 38 individual items, and a 45-variable grid that includes detailed medication information (Cacciola et al., 2008). Three studies were conducted to obtain validity and reliability. Study 1 was a comparison of the number of services with varying timeframes (7, 14, or 28 days); results reported only two core services differed significantly (alpha < 0.005): smoking cessation ($P = 0.016$) and emergency room visits ($P = 0.022$; Cacciola et al., 2008). Study 2 was test-retest reliability of different timeframes (1 week, 2 weeks, and 4 weeks) reporting the reliability coefficient as fair (<0.40 to 0.59), good (0.60 to 0.74), or excellent (>0.74; Cacciola et al., 2008). A reliability coefficient for inpatients at 1 week was 0.64 ($P = 0.034$), at 2 weeks was 0.87, and at 4 weeks was 0.92. A reliability
Coefficient for outpatient at 1 week was 0.70 ($P = 0.020$), at 2 weeks was 0.52, and at 4 weeks was 0.87 (Cacciola et al., 2008). Study 3 was an analysis across all core services reporting the exact agreement for in-person/in-person (77% to 100%) versus in-person/telephone reliabilities (79% to 100%; Cacciola et al., 2008). Findings indicate that regardless of the timeframe patients were able to reliably report services that they were most likely to receive. Overall the TSR-6 is a reliable instrument (Cacciola et al., 2008).

**Women-Centered Care.** Additionally, a women-centered culturally sensitive program with nonjudgmental staff and interconnected support systems were reasons provided by research participants for successful completion of an inpatient treatment program (D’Aunno et al., 2017; Samuelsson, 2015). Research consisting of six focus groups with 30 addiction care practitioners revealed that attention to gender-centered care has mainly focused on women only (Samuelsson, 2015). While the treatment care needs for women are certainly different from the care needs of men, women-centered care does not always include pregnant women (Samuelsson, 2015).

**Inpatient Care.** A gap with patient-centered medical homes (PCMH; inpatient treatment centers) and their lack of connected services outside the facility was discovered by D’Aunno et al. (2017). Many inpatient treatment facilities provide interventions within the treatment programs that lead to successful program completion, but the treatment must continue towards long-term recovery with outpatient treatment. Without collaborative services of inpatient and outpatient care, recovery success for rural pregnant women is dismal (D’Aunno et al., 2017; Ryland & Lucas, 1996). Supportive outpatient community services are critical to prevent unemployment, homelessness, relapse, and progression of mental health disorders (D’Aunno et al., 2017).
**Psychological Care.** Psychological care treatment interventions comprise a majority of the literature related to addiction treatment. While most addiction treatment programs include live and/or virtual counseling sessions, the use of technology has been extended to include self-guided treatment solutions. The research of Marsch and Dallery (2012) explored the options of technology-based intervention using evidence-based therapies (see Table 3). A few of the intervention therapies to treat SUD, including the community reinforcement approach (CRA), therapeutic education system (TES), cognitive behavioral therapy (CBT) and skills training therapies, motivational interviewing (MI), and motivational enhancement therapy (MET), psychosocial interventions for co-occurring issues, mobile psychological interventions, and computerized neurocognitive remediation/executive function therapy (Marsch & Dallery, 2012; see Table 3).

**Table 3**

*A Few Technology-Based Therapies and Descriptions*

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community reinforcement approach (CRA)</td>
<td>Grounded in drug self-administration and behavioral analysis research of drug dependence. Teaches skills and encourages reinforcement behaviors such as prosocial activities rather than drug use. The highly effective treatment approach is used with a variety of substance-using populations.</td>
</tr>
<tr>
<td>Therapeutic education system (TES)</td>
<td>Uses the principles of CRA into a technology-based intervention. First web-based psychosocial treatment for individuals with SUD. Self-directed; uses functionality to build individualized treatment plans, assesses individual knowledge of the material, includes interactive videos, and is adaptive to the individual to promote skills mastery.</td>
</tr>
<tr>
<td>Cognitive-behavioral therapy (CBT) and skills training therapies</td>
<td>Intervention that seeks to modify relations between environmental and cognitive antecedents of the problem behavior. Focuses on skill-building, developing problem-solving, coping, and refusal skills. Includes a six-session video-based program.</td>
</tr>
<tr>
<td>Therapy</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Motivational interviewing (MI) and motivational enhancement therapy (MET)</td>
<td>Semi-directive methods are used to help individuals explore and resolve ambivalent feelings about change and reinforce change behaviors. Includes one brief web-based session.</td>
</tr>
<tr>
<td>Psychosocial interventions for co-occurring issues</td>
<td>Nine-session web-based program that includes counseling for co-occurring issues (depression and SUD). Uses cognitive behavioral therapy skills and motivational interviewing.</td>
</tr>
<tr>
<td>Mobile psychological interventions</td>
<td>Offers of a mobile phone-based psychosocial support program for individuals with SUD and their recovery. The focus is SUD support and relapse prevention.</td>
</tr>
<tr>
<td>Computerized neurocognitive remediation/executive function therapy</td>
<td>A web-based program designed to enhance cognitive skills through exercises that target problem-solving skills, attention, memory, and abstract reasoning. This therapy has been shown to enhance the effectiveness of cognitive-behavioral therapies.</td>
</tr>
</tbody>
</table>

Marsch & Dallery, 2012

Supportive Care. Rural pregnant women with addiction tend to self-isolate, which can lead to increased drug use and disconnection from family and friends. Rural women with addiction have less of an opportunity to increase their support system due to the exposure of smaller populations of people and the stigma associated with addiction. In an attempt to promote recovery and build social support, Palterno et al. (2020) conducted digital storytelling (DST) workshops over three nonconsecutive days for rural mothers in recovery. The three women participants reported feelings of healthy thoughts towards recovery and inspirational stories of empowerment (Palterno et al., 2020).

Pharmacological Care. Pharmacological intervention therapies have proven to be effective for the treatment of opioid addiction. Methadone and buprenorphine are the drugs of choice for the treatment of OUD (SAMHSA, 2021a). As previously mentioned, methadone is considered the gold standard of care for the treatment of OUD during pregnancy and is associated with decreasing the severity of NAS (Jumah et al., 2015). Access to this medication
for rural women proves challenging. There are provider prescribing restrictions requiring a special license (Higgins et al., 2019; Hollbrook, 2015; Jumah et al. 2015; Meyer & Phillips, 2015). Additionally, most of the methadone clinics are located in urban communities, leaving rural women without access to treatment (McCarthy et al., 2020).

Buprenorphine is a safe and effective alternative to methadone for the treatment of opioid addiction in pregnant women (Hollbrook, 2015; Meyer & Phillips, 2015). Buprenorphine is a partial opioid agonist with lowered risk of fatal overdose (Meyer & Phillips, 2015). Unlike methadone, buprenorphine does not require the prescribing provider to have a special license (Higgins et al., 2019; Hollbrook, 2015; Jumah et al. 2015; Meyer & Phillips, 2015). The rate of opioid addiction among rural pregnant women continues to grow and has become a public health crisis in many parts of the United States.

The impact of untreated SUD in rural pregnant women can have devastating consequences for both mother and infant. The rates of psychiatric comorbidity in pregnant women with addiction are high. If this vulnerable population of women is ignored and/or left without adequate access to treatment, their symptoms will lead to an increase of psychological distress and physical health deterioration as well as decreased psychosocial functioning and effectiveness of substance use treatment (Holbrook, 2015). The development of comprehensive and collaborative treatment models is essential to positive health outcomes for pregnant women with addiction and their infants.

**Barriers to Addiction Treatment**

**Access to Treatment**

Without adequate access to treatment, rural pregnant women with addiction may experience tragic consequences and poor pregnancy outcomes (Higgins et al., 2019; Jackson & Shannon, 2012a; Jackson & Shannon 2012b; Jumah, 2016; Kramlich et al., 2018). There are
specific maternal and infant health concerns without proper treatment for SUD during pregnancy. Coincidentally, rural pregnant women attempting to access addiction treatment frequently meet significant challenges, including distance to travel, lack of transportation, financial burden, limited treatment options, insufficient provider expertise, childcare issues, fear of losing their children, and stigma (Higgins et al., 2019; Jackson & Shannon, 2012a; Jackson & Shannon, 2012b; Jumah, 2016; Kramlich et al., 2018; Meyer & Phillips, 2015). In 2005, according to Jackson & Shannon (2012a), only 32% of the clinical admissions for substance use were women. Limited research exists on examining barriers to substance use treatment focusing on rural areas.

**Urban vs. Rural**

A research study of 114 rural and urban pregnant women (rural, n = 85; urban, = 29) admitted to an inpatient detoxification facility was conducted to understand their perceived barriers and motivators of seeking treatment for addiction while pregnant (Jackson & Shannon, 2012b). Participants completed the Health Services Research Questionnaire (an instrument used to collect demographic information) and The Addiction Severity Index (instrument used to gather information on types of substances used over lifetime, past 12 months, and past 30 days) and participated in face-to-face interviews conducted over 4 consecutive days (Jackson & Shannon, 2012b). Results indicated 75% of the participants were from rural areas, 81% of whom reported barriers to treatment (Jackson & Shannon, 2012b). The qualitative interviews revealed four overall categories as barriers to treatment: affordability (no insurance, not enough money), availability (waiting lists, waiting period, paperwork, referrals, not qualifying for treatment), accessibility (lack of support, transportation, and childcare), and acceptability (denial, fear, and stigma) (Jackson & Shannon, 2012b).
Healthcare Providers

Healthcare providers are challenged to decrease the barriers to addiction treatment during pregnancy in rural communities (Kramlich et al., 2018). Additionally, rural providers require enhanced education and understanding about perinatal addiction treatment (Kramlich et al., 2018). Culturally responsive treatment programs that take stigma into account hold promise to improve rural pregnant women’s addiction treatment experience (Jumah, 2016; Kramlich et al., 2018; Kozhimannil et al., 2019). One patient’s reflection of interaction with healthcare providers who were not supportive expressed, “When I was looked down on, talked about, and treated differently, it makes you really not want to say anything” (Kramlich et al., 2018, p. 1454). In contrast, the same patient had an honest encounter with healthcare providers who were supportive and nonjudgmental because “nobody ever treated me different...even when I did slip, I did fall, I did use, I never was looked at weird or talked down to” (Kramlich et al., 2018, p. 1454). The responses of healthcare providers have a lasting impact on this vulnerable group of pregnant women with SUD. How they are treated and spoken to by members of the healthcare team may be the reason rural pregnant women with addiction choose to avoid seeking treatment for their addiction.

Additionally, healthcare providers must comply with government mandates to licensure and certification before administering, dispensing, and prescribing methadone and buprenorphine (SAMHSA, 2021b). Demand for these medications exceeds their availability, resulting in long waiting periods for an appointment to receive treatment (Higgins et al., 2019; Meyer & Phillips, 2015). Therefore, serious consideration should be given to policy dialogue and the use of mobile units for dispensing medication treatment and telemedicine in rural communities (Kozhimannil et al., 2019). If we continue with the same healthcare practices of today, rural pregnant women will not receive adequate addiction treatment. Mothers and
infants with addiction will continue to suffer from serious physical and psychological healthcare outcomes.

**Policy**

Rural pregnant women with SUD rely on evidence-based policies from the national, state, and institutional levels (MDSS, 2018; Dopp et al., 2020; Guille et al., 2020; Krans & Patrick, 2016; CDC, 2021a). The importance of safe prescribing practices and expanding services for easier availability and accessibility are requirements to properly care for this population of women in rural areas. Efforts to impose negative consequences and penalize women for seeking addiction treatment during pregnancy result in harmful pregnancy outcomes. Therefore, healthcare providers should advocate for health policy informed by scientific research and evidence-based practice to optimize healthcare outcomes for mothers and infants (Krans & Patrick, 2016).

**National Level**

The CDC is committed to preventing opioid overdoses, misuse, and deaths. The CDC has implemented a five-point strategy to prevent opioid overdoses and deaths (CDC, 2021a).

Implementation of the five points are:

1. *Conduct surveillance and research.* The data from research will help decision-makers understand the significance of the problem and focus resources where needed.
2. *Build state, local, and tribal capacities.* This will strengthen the drug monitoring and regulating programs by working together.
3. *Support providers, health systems, and payers.* This will promote safer and more effective prescribing practices, implement quality improvement measures and the CDC’s guidelines for improvements in coverage, removal of barriers, and drug utilization review.
4. **Empower consumers to make safe choices.** Promotion of risks related to prescription and nonprescription opioid use.

5. **Partner with public safety.** Strengthen communication between public health and law enforcement to improve data sharing, surveillance, and targeting interventions.

**State Level**

In 2018, House Bill 2280 was proposed in the Missouri legislature to expand Missouri HealthNet benefits for pregnant women to provide substance abuse treatment for up to 1 year after giving birth (MDSS, 2018). Additionally, this bill includes treatment for mental health services as well as substance abuse. This bill will allow for cost-effective treatment while providing improved outcomes for mothers and infants.

Previously in Missouri, coverage for substance abuse treatment ended after 60 days postpartum (MDSS, 2018). Postpartum women have physiological and psychological stress factors placed upon them after birth that require adequate and easily accessible treatment for addiction and mental health disorders. In 2018, there were 28,762 women in Missouri receiving Medicaid who gave birth (MDSS, 2018). Unfortunately, 681 of these women lost Medicaid coverage or were transitioned into a less-comprehensive category of medical care (MDSS, 2018). Meanwhile, 7.92% were women diagnosed with SUD, which correlated to 57 births monthly to women with SUD (MDSS, 2018).

In August 2020, Missouri voters passed another Medicaid expansion bill for $1.9 billion that would provide coverage for approximately 230,000 more people (Schallhorn & Gerber, 2021). This bill had been the center of debate among Democratic and Republican legislators. The Medicaid expansion bill was passed by the Missouri House and Senate (Schallhorn & Gerber, 2021). However, changes to Missouri HealthNet coverage that passed in 2018 still have not been implemented (Schallhorn & Gerber, 2021).
Institutional Level

Despite an increase in rural pregnant women with SUD and the obvious harmful pregnancy outcomes, little is known about hospital policies. Little is known about how or if hospitals implement policies related to SUD in pregnancy (Dopp et al., 2020). Fifty-nine Minnesota hospitals were surveyed regarding their existing policies regarding substance use during pregnancy to obtain information about implementation challenges (Dopp et al., 2020). The qualitative survey responses identified four major challenges experienced when implementing their hospital policy: (1) provider consensus (difficulty obtaining practice consensus among obstetricians; physician resistance), (2) patient response to policy (patients find the practice of urine drug screening stigmatizing and families become angry when social services are involved or infant is transferred to another institution for specialized care), (3) lack of resources (limited hospital resources and staff), and (4) low frequency of occurrence (rural hospitals report not seeing many patients with SUD, staff has little experience; Dopp et al., 2020).

Telemedicine

To reach more rural women with addiction, Guille et al. (2020) conducted a nonrandomized controlled trial of 98 women receiving perinatal treatment for OUD. The purpose of the study was to compare maternal and neonatal outcomes among women receiving care via telemedicine (n = 44) versus in-person care (n = 54; Guille et al., 2020). Participants were seen weekly for 4 weeks, every 2 weeks for 4 weeks, and monthly thereafter (Guille et al., 2020). Information regarding relapse prevention and buprenorphine therapy was included in the telemedicine visits. Study results found no significant difference in treatment retention and NAS between the two groups (Guille et al., 2020). Results for retention in treatment at 6 to 8 weeks postpartum were 80.4% (telemedicine) and 92.7% (in person) (treatment effect = –12.2%; 95%
CI, –32.3% to –4.4%; \( P = .17 \) (Guille et al., 2020). Results for differences in NAS rates were 45.4% (telemedicine) and 63.2% (in person) (treatment effect = –17.8%; 95% CI, –41.0% to 8.9%; \( P = .12 \)) (Guille et al., 2020).

The literature on the use of telemedicine in the treatment of OUD during pregnancy is limited (Guille et al., 2020). However, much of the literature supports the use of telemedicine as an instrument for reaching rural communities. Current legislation has called for revisions of the Ryan Haight Act of 2008 that places guidelines on the prescribing practices of controlled substances via telemedicine, a call for change continues (Guille et al., 2020; Lacktman & Ferrante, 2018).

The use of telemedicine could provide lifesaving evidence-based treatment benefits to many rural women with addiction and their infants. Pregnancy is a critical window of opportunity to get women into treatment for SUD. Access to treatment must be easy. Telemedicine is a breakthrough solution for solving the problem of access to healthcare for rural women with SUD during pregnancy. With advancements in technology, telemedicine could reduce maternal and infant mortality and improve healthcare outcomes for this special population.

**Theoretical Model**

Three theoretical models were reviewed and assessed to determine the best fit to address the research questions:

**Research Question 1:** How do rural women describe their experiences with SUD during pregnancy and postpartum?

**Research Question 2:** What are their motivations to seek and remain in treatment?
Review of Three Theoretical Models

Self-Efficacy, Social Control, and Self-Determination. Three theoretical models reviewed for this research study are Bandura’s self-efficacy theory, Hirschi’s social control theory, and self-determination theory (SDT). Bandura’s self-efficacy theory is commonly used when behavioral changes are the desired outcome, focusing on social confidence, expectations of self-efficacy whether or not coping behaviors are initiated, how much effort is given, and how the effort will be sustained amid obstacles and adverse experiences (Bandura, 1977). Hirschi’s social control theory is rooted in the strong bonds of family, friends, and other aspects of societal motivators by which individuals chose to participate in responsible behavior and avoid engaging in criminal behaviors (Moos, 2007; Ward et al., 2015). SDT was chosen as the theoretical model for this research study. This theory is an assumption that all human beings have a natural inborn desire to pursue growth, well-being, and health (Deci & Ryan, 2002).

Self-Determination Theory

This theory comprehensively addresses each of the research questions with the theories’ four concepts (competence, relatedness, autonomy, and motivation).

Theory Application. STD is a macro theory that has been applied to a variety of domains, including health, education, parenting, sports, work, religion, and environment (Deci & Ryan, 2002; Deci & Ryan, 2008; Ng et al., 2012). Some social-contextual factors support the natural innate tendency to strive for personal best, and other social-contextual factors sabotage a person’s desire to do well (Deci & Ryan, 2002). Furthermore, SDT requires necessary conditions to occur that lend to supportive and healthy environments for continued personal growth and well-being (Deci & Ryan, 2002). SDT predicts a broad range of developmental outcomes to occur as a result of varying social-environmental conditions (Deci & Ryan, 2002).
**Theory Structure.** SDT is organized into three fundamental psychological needs: competence, relatedness, and autonomy (Deci & Ryan, 2002). Motivation is viewed as the fourth concept because it is the foundation of the three psychological needs (Deci & Ryan, 2002). The three fundamental psychological needs are not acquired concepts; instead, they are innate (Deci & Ryan, 2002). When people are satisfied with these three basic needs, they are predicted to have a healthy functioning existence. Conversely, when these basic needs are distorted, people experience life functions that are not congruent with a healthy existence (Deci & Ryan, 2002). As human beings, we are innately drawn towards situations that can provide us with competence, relatedness, and autonomy (Deci & Ryan, 2002).

**Concepts**

**Competence.** Competence refers to feelings of being able to master the environment and the ability to enforce changes and develop new skills (Deci & Ryan, 2002). This need can push people into challenging situations that produce optimal life enhancements. Competence is a personal feeling of confidence. It is not a learned skill or capability (Deci & Ryan, 2002).

**Relatedness.** Relatedness provides a sense of belonging or connectedness to others; caring for others and being cared for by others creates a sense of connection (Deci & Ryan, 2002). A measurable outcome is not tied to the need for relatedness, but there is a desire to be accepted by others for a sense of security (Deci & Ryan, 2002).

**Autonomy.** Autonomy refers to the choices made by a person’s own behavior (Deci & Ryan, 2002). This third basic need is a person’s own willingness to act based on personal interest. There may be some influence from others, but the individual’s choice to act is not dependent on the opinions or desires of others (Deci & Ryan, 2002).

An understanding of these three fundamental psychological needs of competence, relatedness, and autonomy is important for understanding rural pregnant women with SUD.
Individual satisfaction of these three basic psychological needs creates sustainable motivation, which has evolved to include intrinsic and extrinsic motivation (Deci & Ryan, 2002).

**Motivation.** Motivation is presented as two distinct types of motivation: intrinsic and extrinsic. *Intrinsic motivation* is behaviors derived from a person’s inherent satisfaction of behavior and the promotion of healthy behaviors for positive change and has a focused dependence on the outcomes (Chan et al., 2019; Deci & Ryan, 2002). These are the internal pressures to change that are felt within the individual (Chan et al., 2019; Deci & Ryan, 2002).

Rural women with addiction have an intrinsic motivating desire to stop their addiction. Many pregnant women with addiction lack the competence and autonomy that is necessary to change. Therefore, pregnant women with SUD require support and understanding from others to help them enter treatment for their addiction. Intrinsic motivation is necessary for the success of effective addiction treatment (Ryan & Deci, 2008; Groshkova, 2010).

*Extrinsic motivation* is a type of motivation that is useful for situations in which behaviors are not inherently interesting or valuable (Deci & Ryan, 2002). Extrinsically motivated behaviors are usually prompted by a significant other or group. Value is seen in the activity that is repeatedly observed in others; sometimes a reward is attached to the action (Deci & Ryan, 2002). Additionally, the individual witnessing the action may choose to join the activity to feel included and gain approval from others, to feel connected and relate to the person or group (Deci & Ryan, 2002). These pressures come from the outside. There may be outside pressures or coercion to change a behavior (Groshkova, 2010).

**Removal of Autonomy**

Forcing people into addiction treatment removes their autonomy (Ryan & Deci, 2008). A decrease in an individual’s autonomy may result in poor engagement and success during addiction treatment (Ryan & Deci, 2008). When pregnant women with addiction have more
autonomy, they believe their treatment is more important (Holsapple & Jensen, 2014; Ryan & Deci, 2008). They experience less depression, distractions, and tension (Ryan & Deci, 2008). Coincidentally, they feel more satisfied and have greater self-esteem (Ryan & Deci, 2008).

**Drug Court Ordered Treatment.** There are situations in which pregnant women are forced into treatment facilities to stop their substance use. Forcing women with addiction into treatment seems logical for the health of the mother and infant; unfortunately, the success rate is poor (Ryan & Deci, 2008). A pilot study program was conducted in New York to provide health education and socialization for pregnant women ordered into drug court; this program considered the effects of constrained choice (Holsapple & Jensen, 2014). Constrained choice refers to an understanding of the competing demands and limited resources that can affect an individual’s choices within the constraints they face (Holsapple & Jensen, 2014). The primary goal of the program was to decrease infant mortality; secondary goals included education services focused on early childhood development. Additionally, the program offered skills for empowerment and assistance with housing and medical appointments. The program was staffed by one social worker and one registered nurse who met with each of the 285 participants on their first day of orientation to treatment court (Holsapple & Jensen, 2014). The staff provided multiple contacts with the participants depending on their expressed needs.

Ultimately, the results of the pilot study were successful in decreasing infant mortality and improving healthcare outcomes for the participants by completing their drug court requirements (Holsapple & Jensen, 2014). Institutional support and assistance with navigating the system empowered pregnant women with addiction with improved decision-making abilities and more autonomy over their life choices (Holsapple & Jensen, 2014).

**Motivation.** Motivation is a vital component to the success and retention rates of pregnant women with addiction enrolled in treatment programs. Motivation is defined as an
innate observable and measurable behavior that guides goal-oriented behaviors (Deci & Ryan, 2008; Groshkova, 2010). SDT is described as a continuum, with types of motivation and regulation along this continuum (Deci & Ryan, 2002; see Table 4). Regulation refers to a sense of self-regulation—a natural process that occurs when individuals transform emotions, thoughts, and behaviors in ways that are internally acceptable (Deci & Ryan, 2002; Deci & Ryan, 2008).

**Explanation of Table 4**

**Motivation Continuum.** In Table 4, the first type of motivation described on the continuum is amotivation. Amotivation refers to no motivation, no action at all, or acting passively (Deci & Ryan, 2002). The next motivation along the continuum is extrinsic. As previously mentioned, extrinsic motivation is usually prompted by a significant other or group; value is seen in the activity that is repeatedly observed in others, and sometimes a reward is attached to the action (Deci & Ryan, 2002). The last type of motivation on the continuum is intrinsic motivation. Intrinsic motivation, as previously described, is the inherent act of doing an activity out of individualized interest (Deci & Ryan, 2002).

**Regulation Continuum.** The first type of regulation in Table 4 is nonregulation, which is the absence of regulation. The first regulation under extrinsic motivation is external regulation. This regulation is the least autonomous form of extrinsic motivation (Deci & Ryan, 2002). External regulation is referred to as having typical motivation instincts to obtain a reward or avoid punishment (Deci & Ryan, 2002). Introjected regulation is the second type of regulation under extrinsic motivation. This second type of regulation includes behaviors performed to avoid guilt and shame or maintain ego (Deci & Ryan, 2002). Identified regulation is next on the continuum under extrinsic motivation. This regulation is a more self-determined form of extrinsic motivation, involves consciously accepting and valuing behaviors, and has a high degree of perceived autonomy (Deci & Ryan, 2002). The final regulation is intrinsic regulation.
Intrinsic regulation is behaviors performed for an individual’s inherent interest and enjoyment (Deci & Ryan, 2002).

**Quality of Behavior Continuum.** Quality of behavior is either non-self-determined or self-determined, referring to the amount of determination an individual possesses. The amount of determination is in alignment with the columns of amotivation and intrinsic motivation (Deci & Ryan, 2002).

Table 4
*The Self-Determination Continuum, with Types of Motivation and Types of Regulation.*

<table>
<thead>
<tr>
<th>Type of Motivation</th>
<th>Amotivation</th>
<th>Extrinsic Motivation</th>
<th>Intrinsic Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Regulation</td>
<td>Nonregulation</td>
<td>External Regulation</td>
<td>Introjected Regulation</td>
</tr>
<tr>
<td>Quality of Behavior</td>
<td>Non-self-determined</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Deci & Ryan, 2002, p. 16

Rural pregnant women experience low intrinsic motivation and high extrinsic motivation, which can result in amotivation and a non-self-determined outcome. This population of women with specific healthcare needs should not be forced into treatment for their addiction. Alternatively, rural women with addiction must receive nonjudgmental care and support for their addiction during pregnancy. A treatment facility that fosters an environment for positive intrinsic motivation and self-awareness is ideal.
Synthesis

Urgency for Treatment and Understanding

There is an urgent need for greater attention to understanding SUD in rural communities. Rural pregnant women are an understudied vulnerable population with unique unmet health care needs (Jumah, 2016; Kramlich et al., 2018; Sloan et al., 1992). Reasons for the phenomenon of why rural women die at a greater rate than urban women remain largely unknown (Hansen & Moloney, 2019).

Literature Gap. Addiction is a disease process that has been described in the literature since at least the 17th century. Dr. Benjamin Rush was the first to write about and suggest that alcoholism is a disease (K., 2019). The terms used to describe addiction have evolved over the years. The term SUD is the focus of this research. There is a noticeable gap in the literature on the study of addiction; the stigma attached to this disease is quite possibly to blame. Furthermore, the literature on rural pregnant women with addiction is limited, with most of the literature focused on pregnant women with addiction residing in urban communities. According to the United States Census Bureau (2010), any population, housing, or territory not in an urban area with a population of less than 50,000 is considered rural.

Little is known about the substance use habits of rural pregnant women (Sloan et al., 1992). Information is more readily available about the substance use habits of urban pregnant women (Sloan et al., 1992). There is substantial evidence to support a true public health concern for SUD among rural pregnant women (Dombrowski et al., 2016; Galvin et al., 2020; Hansen & Moloney, 2019; Jumah, 2016; Kramlich et al., 2018; Shaw et al., 2015). Perinatal screening practices for SUD must improve to successfully diagnose and provide treatment for these high-risk women. Additionally, adequate training and education for healthcare providers on the
subject of SUD and proper use of the screening instruments are necessary to provide adequate treatment for pregnant women with addiction.

**Consequences on Health.** Both mother and infant face serious health consequences related to SUD during pregnancy, which leads to complex medical care needs (Dworkin et al., 2017). Infants may experience prematurity, growth restrictions, low birthweight, NAS, and increased hospital stay (McQueen et al., 2015; Meyer et al., 2012; Kramlich et al., 2018). Maternal consequences of SUD are associated with relapse and high-risk behaviors, including intravenous drug use, prostitution, and other criminal behaviors (Krans & Patrick, 2016).

**Failure to Understand Disease Process.** The disease process of addiction is not readily understood. Many healthcare providers admit to not having adequate knowledge or comfort level with discussing addiction. They find it difficult to discuss addiction with their patients. Furthermore, rural pregnant women would receive more adequate treatment for their disease if healthcare providers had a better understanding of the process of addiction. Pregnant women with addiction want to stop their disease. They rely on the expertise and trustworthiness of their healthcare providers.

**Disease Characteristics.** SUD is a progressive disease characterized by compulsive, risk, and self-destructive behavior that eventually results in social impairment (APA, 2013; Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013). Treatment needs for pregnant women are more complex compared to the needs of nonpregnant women with addiction (Jumah, 2016; Kramlich et al., 2018; Kozhimannil et al., 2019). One example is the use of harm reduction. This treatment intervention is a common practice in individuals with addiction (Benoit et al., 2014). However, the use of harm reduction during pregnancy is problematic and not advised (Benoit et al., 2014). When pregnant women scale back on the frequency and/or
amount of substances used, harm is still inflicted on them and the baby. The practice of harm reduction while pregnant will still result in poor outcomes for both mother and infant.

**Treatment Needs.** Rural pregnant women rely on collaborative care treatment models. Collaborative care treatment models include women-centered, culturally sensitive healthcare services that include childcare and psychological and physical healthcare all in one supportive, nonjudgmental environment (D’Aunno et al., 2017; Morelli et al., 2001; Ryland & Lucas, 1996; Samuelsson, 2015). Women with addiction rely on a “one-stop-shop” for all their healthcare needs that can accommodate their children.

**Treatment Barriers.** Rural pregnant women with addiction seeking treatment are met with significant challenges, including inadequate transportation, travel distance, inadequate financial resources, limited options, fear of losing children, and stigma (Higgins et al., 2019; Jackson & Shannon, 2012a; Jackson & Shannon, 2012b; Jumah, 2016; Kramlich et al., 2018; Meyer & Phillips, 2015). Without adequate access to treatment, rural pregnant women with addiction may experience tragic consequences and poor pregnancy outcomes (Higgins et al., 2019; Jackson & Shannon, 2012a; Jackson & Shannon 2012b; Jumah, 2016; Kramlich et al., 2018). Healthcare providers must advocate for healthcare policy reform that is supported by science and evidence-based practice to optimize healthcare outcomes for mothers and infants (Krans & Patrick, 2016).

**Policy Needs.** On a national level, the CDC’s implementation of the five-point strategy to prevent opioid overdoses and deaths is a step in the right direction. The five points are to conduct surveillance and research; build state, local, and tribal capacities; support providers, health systems, and payers; empower consumers to make safe choices; and partner with public safety (CDC, 2021a). Missouri passed House Bill 2280 in 2018, which expands Missouri HealthNet benefits for pregnant women to provide substance use treatment for up to 1 year.
after delivery (MDSS, 2018). Research supports there is little known about hospital policies regarding how/if they implement policies related to SUD during pregnancy. Telemedicine could narrow the gap in rural communities by delivering healthcare and substance use treatment needs virtually. The use of telemedicine provides healthcare providers the ability to reach more people in rural communities.

**Summary**

SUD in pregnant women residing in rural communities remains a serious public health concern. The literature is conclusive and supports the need for additional research on this important topic of rural pregnant women with SUD. The next chapter presents detailed information regarding the qualitative research methodology used for this research.
CHAPTER 3: METHODOLOGY

Introduction

The experiences of rural pregnant women in Missouri who receive treatment for SUD during pregnancy merit further research. Previous research has documented some of the barriers rural pregnant women face, but the nuances of the challenges are not fully understood (Higgins et al., 2019; Jumah, 2016; Kramlich et al., 2018). A qualitative, descriptive inquiry approach with this population offers insights for healthcare providers and staff who provide care for these women. The interpretation and report generated from qualitative data analysis are essential for tailoring substance use treatment in a manner that meets the needs of this unique population of rural women.

This research study aimed to understand the unique experiences and needs of rural pregnant women with addiction. This chapter discusses the overall research design, including a specific approach, selection of research sites, population, sampling, participants, instruments, sources of data, procedures, and data analysis. Data analysis and the art of writing qualitative research uncover more questions regarding data credibility and/or trustworthiness (Miles et al., 2014). Therefore, it is important to ensure credibility and trustworthiness by accurately and completely reporting the process used to obtain this information. Additionally, the use of an analytical team aided in the rigor regarding the credibility and trustworthiness of the data analysis and results. The research questions were:

Research Question 1: How do rural women describe their experiences with SUD during pregnancy and postpartum?

Research Question 2: What are their motivations to seek and remain in treatment?
Overall Research Approach

A qualitative, descriptive research design with grounded theory methods for data analysis was used for this research study. Qualitative research includes a variety of methods, such as ethnography, phenomenology, grounded theory, narrative inquiry, and case studies (Merriam & Tisdell, 2016). Qualitative research is a method that gathers rich, detailed information from the participants and is one in which the researcher is interested in understanding how participants interpret their experiences, build their worlds, and what meaning they make of experiences (Merriam & Tisdell, 2016; Kuo et al., 2013). Qualitative research is an iterative process in which the data, concepts, and evidence are interconnected (Aspers & Corte, 2019). The data collected in qualitative research are carefully reviewed and compared to assign meaning, codes, and categories (Corbin & Strauss, 1990; Corbin & Strauss, 2015).

Grounded Theory

Grounded theory was developed in 1967 from the work of Anselm Strauss and Barney Glaser (Corbin & Strauss, 2015). Over time, Strauss’ work with other scholars developed and evolved into his unique style of grounded theory. Grounded theory is unique compared to the other forms of qualitative research. In this approach, the concepts are derived from the data collected (Corbin & Strauss, 2015). The process of data analysis and data collection are interrelated, resulting in an ongoing iterative research process (Corbin & Strauss, 2015).

Process. The specialized qualitative method of grounded theory involves an iterative process and researcher immersion in the data that lead to an improved understanding of the phenomenon studied (Aspers & Corte, 2019; Corbin & Strauss, 1990). Grounded theory is a structured yet flexible methodology used when understanding of social processes is desired about a phenomenon. This methodology assists the researcher in identifying specific linkages
among conditions, actions, and consequences. Additionally, this methodology aims to generate change through process (Corbin & Strauss, 1990). The meticulous process of detailed coding results in a set of interrelated concepts that can be used to either build a substantive theory or lead to the development of well-described categories (Aspers & Corte, 2019; Corbin & Strauss, 1990). For the purposes of this research, grounded theory methods were used to generate well-described categories and not necessarily to build a substantive theory.

Board Approval

This research study was approved by the University of Missouri-St. Louis Institutional Research Board (IRB; see Appendix A) and Missouri Department of Mental Health (MDMH; see Appendix B). Approval by these two organizations lends evidence to the importance of this research and provides trustworthiness and credibility to the research study.

Recruitment Process

At the start of this research, participant recruitment was limited to addiction treatment facilities in rural Missouri. An addendum was approved by the IRB to expand the recruitment efforts to include other sources of recruitment, including women’s shelters, word of mouth, and requests for assistance by various related Internet listservs. An additional approved change was to include women with SUD who received addiction treatment during the postpartum period as well as during pregnancy. This researcher relied on the assistance of the treatment facility and women’s shelter staff for the recruitment of participants. The researcher remained in close contact with the staff at these facilities by email, phone, and Zoom video conferencing.

Recruitment of Research Sites

Meetings. The research sites for this study included a variety of substance use treatment facilities and women’s shelters throughout rural areas of Missouri. These sites were obtained through networking opportunities made possible through the University of Missouri-
St. Louis and the Missouri Institute of Mental Health. During a meeting with two researchers from the Missouri Institute of Mental Health, one researcher agreed to send introduction emails to several treatment facilities in rural Missouri. These emails introduced the researcher and briefly described the research topic. Emails were sent to Family Counseling Center (FCC) Behavioral Health: Pearson-Centered Recovery & Wellness (Kennett, MO), Gibson Recovery Center (Cape Girardeau, MO), Preferred Family Health (Springfield, MO), Comtrea (Arnold, MO), and Southeast Missouri Behavioral Health (Farmington, MO).

The nurse researcher and her dissertation chair from UMSL scheduled Zoom meetings with each treatment facility’s leadership team. After introductions, the research purpose and recruitment strategies were discussed. A partnership agreement was completed and letters of support were received from each facility: FCC, Gibson Recovery Center, Preferred Family Health, and Southeast Missouri Behavioral Health. Recruitment extended beyond these four facilities, as previously described.

Recruitment of Participants

Role of the Treatment Facility Staff. The responsibilities of the treatment facilities and women’s shelter were to help with the recruitment of participants. The counseling and healthcare staff at these facilities were responsible for providing patients with the flyer (Appendix C) developed by this researcher. The flyer included information about the participant inclusion criteria and the researcher’s confidential contact information. The staff was not responsible for participant referrals. However, in some situations, the participant requested assistance from the facility staff when contacting this researcher.

Role of the Researcher. This researcher developed a trusting and positive relationship with the facility staff, which resulted in enhanced recruitment of participants. This researcher remained in close contact with the facility staff either by phone or email and ensured they were
actively recruiting participants and passing out the flyers. This researcher also requested to join
the beginning of their group therapy meetings via Zoom as allowed. The purpose of attending
the meetings was to introduce and explain the research purpose and inclusion criteria. The
facilities did not allow the researcher to attend any of their group meetings. The facilities did not
allow the researcher to attend in person.

Population

The population for this research study included rural women who were either currently
pregnant or were 5 years postpartum, resided in rural Missouri, and received treatment for
addiction during pregnancy or postpartum. Rural was any population, housing, or territory, not
in an urban area with a population of less than 50,000.

Rural Women with Addiction During Pregnancy

Missouri. The number of rural pregnant women in Missouri living with addiction is
unknown. MDMH (2019) reports substance use and mental health statistics by county and is
inclusive of the entire population; pregnancy is not specified. The latest statistics related to rural
maternity care from MDHSS (2015) reported that 42.9% of rural Missouri women were forced to
delay prenatal care because of insufficient availability of appointments. Additionally, one in five
pregnant women in rural Missouri did not receive prenatal care during the first trimester
(MDHSS, 2015). The state also reports higher rates of preterm birth (6.2%), low birthweight
infants (1.1%), and overall perinatal conditions (6.6%) per 100 residents among women from
rural areas compared to urban women (MDHSS, 2015).

Substance Use Behaviors. Information is limited about the substance-using habits and
patterns of rural pregnant women in Missouri. Overall, more is known about urban women and
their substance use during pregnancy (Sloan et al., 1992). Researchers have discovered a higher
rate of substance use among populations of rural pregnant women compared to urban pregnant women (Shaw et al., 2015).

**Sampling**

*Types of Sampling Strategies*

**Purposeful and Snowball Sampling.** This research study used a purposeful sampling strategy. Purposeful sampling is based on the assumption that “the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned” (Merriam & Tisdell, 2016, p. 96). Snowball sampling, which is the most common form of purposeful sampling, occurs when a participant refers someone they know to participate; these may be friends, family, or acquaintances (Merriam & Tisdell, 2016). Snowball sampling was not used in this research study.

**Sample Size.** The exact number of participants needed for the sampling was not determined. With purposeful sampling, the size of the sample is determined for informational considerations (Merriam & Tisdell, 2016). For this research study, the data were maximized to the point of saturation at 17 sample participants. Saturation means that as new information is being collected from the participants, new insights are not being discovered from the data (Corbin & Strauss, 1990; Merriam & Tisdell, 2016). For this research, a cap of 20 participants was set at the direction of the researcher’s dissertation chair.

**Participants**

*Inclusion/Exclusion Criteria*

Participants were selected if they meet the inclusion criteria: 18 years of age or older, pregnant or up to 5 years postpartum, reside in rural Missouri and received treatment for SUD during pregnancy or postpartum. The participant exclusion criteria were age younger than 18
years, not pregnant or more than 5 years postpartum, not residing in a rural area of Missouri, and not receiving treatment for SUD while pregnant or during the postpartum period.

**Pilot Study**

A pilot study with two participants was conducted during Spring 2021. Three treatment facilities were contacted: Gibson Recovery Center, Family Counseling Center (FCC), and Preferred Family Healthcare. Two of these facilities were involved in the recruitment process by presenting the flyers to potential participants (see Appendix C). The Gibson Recovery Center requested this researcher obtain approval from MDMH. Approval was granted from MDMH (see Appendix B).

**Purpose of the Pilot Study**

The purpose of the pilot study was to inform future research. The analyzed pilot data provided valuable insights required for recruitment, inclusion criteria, and interviewing. According to Merriam & Tisdell (2016), pilot interviews are a great way to evaluate whether the interview questions are sufficient, and asking good questions takes practice. Furthermore, pilot interviews are critical for interview practice and provide insight into which questions require revision (Merriam & Tisdell, 2016).

**Participant Connection.** Interviews with two participants were completed. The participant’s counselor from the treatment facility contacted this researcher and asked to assist with scheduling the interviews at the participant’s request. The participants did not have a telephone or computer/internet access. Approval for this process change was verbally provided by Dr. Kimberly Werner (committee member) during a Zoom meeting.

**Interview Process.** The counselor from the treatment facility assisted the two participants with scheduling a date and time for the interview and provided them private office space at the treatment facility with computer access. The interviews were conducted over Zoom
and were audio/video recorded. Before the interview, the consent form was reviewed with each participant by this researcher, the signing was witnessed, and the participants showed the signed consent to the researcher to show proof of their signature. The participants gave the consent form to the counselor who then immediately scanned and emailed the consent form to this researcher. This researcher and participant witnessed the original hardcopy consent be destroyed by the treatment facility staff member.

**Preliminary Pilot Results.** The pilot data were analyzed using grounded theory methods. An analytical team met to review the data from one participant and discuss preliminary concepts. Three preliminary concepts were developed: Support Systems, Desire to be with Children, and Loss of Control. Participant responses to questions about what motivating factors they had for seeking treatment aligned under Living Children and Better Life for Self.

**Lessons Learned**

**Demographic Questions.** Following the pilot study interviews, one demographic question was removed and two demographic questions were added. The demographic question removed was asking the participant to select a pseudonym. This question was instead added to the interview explanation and purpose section. The explanation and purpose of the interview occur before the audio recording. This change added an extra layer of protection of the participant’s identity.

**Primary Topic Interview Questions.** The primary topic interview question changed for clarification purposes was regarding the participant’s advice for healthcare providers. The term “healthcare provider” was not understood by the participant and has been replaced with “doctor.” This question received further clarification edits to ask about advice for the doctors they see during prenatal care visits. Additionally, the primary topic interview questions were reordered to improve the organizational flow of the topics.
Data Sources

Interview Guide

An interview guide was created to conduct semi-structured interviews for data collection (see Appendix D). The interview questions were developed from a review of the literature. All interview questions were reviewed by the dissertation committee members for content validity.

The Wording of the Questions. The wording of the questions is crucial to extracting the type of data desired. It is important to ask questions free of technical jargon and terms that may not be understood by the participant (Merriam & Tisdell, 2016). Questions must include words that make sense and can be understood by the interviewee. Patton (2015) suggests six types of questions. All questions in the interview guide include each of these six types.

1. Background/demographics questions: Obtain demographic information (age, income, education, etc.).
2. Knowledge questions: Elicit the person’s actual knowledge about a situation.
3. Opinion and values questions: Elicit a person’s beliefs or opinions.
4. Feeling questions: “Tap the affective dimension of human life” (looking for adjective responses such as happy, anxious, confident, afraid, intimidated, etc.).
5. Experience and behavior questions: Refer to the things a person does or did, their actions, behaviors, and activities.
6. Sensory questions: Similar to experience and behavior questions, but try to elicit more information about what was seen, heard, touched, etc.

Structure of the Interview Guide. The interview guide is comprised of 10 demographic questions to obtain data on age, race, level of education, town, relationship status, number of children, who lives in the home, number of weeks pregnant (if pregnant), number of times
entering treatment, and drug of choice. The choice of collecting the demographic data verbally was made to create an easier process for the participant, rather than having the participant complete an online survey. The remainder of the interview guide includes 17 primary topic interview questions specific to the participant’s history and treatment experiences of substance use, motivating factors for treatment, barriers to treatment, suggestions for healthcare providers, support from others, experiences with stigma, and positive and negative feelings towards their experience with addiction. An additional five subsequent interview questions may or may not be asked of the participant (see Appendix D).

**Memo Writing and Field Notes**

Additional sources of data used were memos and field notes. It is important to distinguish the differences between memos and field notes. Memos are written down after the interview takes place to capture the researcher’s thoughts regarding particular aspects of the interview. They are often lengthier than field notes and may include more in-depth thinking. During each interview, field notes were recorded in a notebook and used during the data analysis process (Corbin & Strauss, 2015).

**Data Collection**

The data collection procedures used for this research included semi-structured interviews with the use of an interview guide. Using an interview guide allowed the researcher to gather information with the participant while simultaneously generating an audio recording of the interaction. Semi-structured interviewing allows the researcher flexibility for what order the questions are asked during each interview (Corbin & Strauss, 2015). Additionally, after the primary topic interview questions are asked, both the participant and researcher are free to ask additional questions that are relevant to the topic (Corbin & Strauss, 2015). All participants were
asked the same questions from the interview guide that focused on the primary topics that
address the two research questions.

*Steps of the Data Collection Process*

**Participant and Researcher Contact.** Participants were instructed to contact the researcher by either confidential email or phone as indicated on the flyer (see Appendix C). All participants contacted the researcher by phone; no one emailed the researcher. They received the flyer either from the facility staff or by seeing it posted at the facility. Some participants chose to request assistance from the facility staff to contact the researcher.

**Scheduling the Semi-structured Interview.** After contact had been established, a 1-hour interview appointment was scheduled. The participants were offered the choice of either participation by phone call (audio-recorded) or Zoom video/audio conferencing (audio/video recorded). Participants who chose the Zoom option received a videoconference invitation with an access link emailed from the researcher. When a participant requested assistance from the facility staff for scheduling, the Zoom link was sent to the treatment facility staff member.

*Steps of the Interview Process*

**Interview Environment.** This researcher created a welcoming and nurturing environment for the participants. It is important for the participants to feel comfortable and recognize the interview time together as a nonjudgmental interview experience. The interview was conducted as a relaxed and natural conversation between the participant and researcher.

**Introduction of Researcher and Research.** This researcher provided each participant with a brief introduction of the researcher’s professional background and a brief review of the research purpose. This researcher asked the participant if they had any questions.

**Explanation of Process.** This researcher explained the interview process to each participant and described what they could expect to happen. Taking the time to give this
explanation helped the participant feel welcome and comfortable during the interview. The researcher’s explanation of the process included how long the interview could last, a review of the informed consent document steps taken to ensure confidentiality, the audio/video recording process, and types of questions that may be asked.

**Informed Consent Process.** Participant consent was obtained electronically using DocuSign, or they could choose to sign a hard copy of the consent while on Zoom. All signatures received during the Zoom call were witnessed by this researcher. This researcher and participant then witnessed the facility staff destroy the original hard copy consent. Participants who choose to use DocuSign were emailed the DocuSign link and were helped through logging in and accessing the consent form. All consent forms were reviewed with the participants before the start of the interview. This researcher reviewed the consent form with the participant per IRB protocol. All completed consent forms were printed and kept in a confidential file locked in the researcher’s office filing cabinet. An electronic version of the consent was kept secure on the researcher’s personal computer that is password protected and only accessible by this researcher.

**Selection of Pseudonym.** All participants were invited to select a pseudonym name or request the researcher assign a pseudonym name. Assigning participants a number or pseudonym name is a common practice in qualitative research (Corbin & Strauss, 2015).

**Audio/Video Recording Process.** This researcher asked all participants for their permission to audio and/or video record the interview. All participants received an explanation from the researcher regarding the purpose of recording the interview. This researcher described to the participant how the data would be used and steps that are taken to maintain participant confidentiality, asked if they had last-minute questions, and announced when the audio recording would begin. All participants were provided an opportunity to decline the audio or
video recording. This researcher planned to write detailed hand-written notes in real-time if the audio recording was declined. All participants gave consent to record the interview, so detailed handwritten notes were not necessary.

**Asking the Demographic and Primary Topic Interview Questions.** All participants were asked questions from the interview guide (see Appendix D). The 10 demographic questions were asked first, followed by the 17 primary topic questions. Lastly, the five additional questions were asked at this researcher’s discretion.

**Additional Questions.** The researcher did ask additional clarifying questions during the standard interview questions. At the end of the interview, this researcher asked the participant if they had any questions they would like to ask related to the research topic. Once there were no more questions, this researcher announced the stopping of audio/video recording.

**Conclusion of Interview.** Interviews were concluded when the participant had chosen to stop the interview or when this researcher was satisfied with the data collected. None of the participants asked to stop the interview prematurely. After completion of the interview session, the participant received a $25 e-gift card.

**Data Security**

All electronic data collected was kept confidential and password protected on this researcher’s personal computer and phone. Hard copies of data such as notes, memos, consents, and transcripts were kept confidential and protected in a locked file cabinet within the researcher’s office. Only the audio portion of the Zoom video conference was used for this research. When the audio recording had been transcribed all audio and video recordings were destroyed to protect the participants’ identity.
Data Analysis

Transcription Process

The audio and video transcripts were transcribed by this researcher. The researcher copied the Zoom audio transcript into a Word document. The data were reviewed and edited while listening to the Zoom audio recording. The data were thoroughly reviewed, coded, and analyzed using grounded theory methods.

Process of Data Analysis

Initial Step. Analysis of the data began immediately following the first interview. This practice is a hallmark of grounded theory methods to direct the researcher during the next interview (Corbin & Strauss, 1990). The initial transcript was analyzed using the “Review” function of Microsoft Word. During the open coding process, meaning units were selected by the researcher; meaning units are sections of text that have enough substance to analyze. This process took place by reading the text line by line. Meaning units are typically relatively short, but they can be as long as a few lines of text (Chenail, 2012). Once the meaning units were identified, the researcher generated ideas of what the text meant. The intellectual work of “open coding” is an interpretive process by which data are broken down analytically (Corbin & Strauss, 1990). The result of that analytic work is “codes.”

During the process of open coding, a constant comparison of the datasets takes place to identify concepts and pattern development. Each line of the transcript was reviewed (Corbin & Strauss, 1990; Tie et al., 2019). Important words were grouped and labeled with as many codes as possible during this initial step of data analysis (Corbin & Strauss, 1990; Tie et al., 2019).

Intermediate Step. This step involved intermediate or axial coding. The process of axial coding is to review how categories are related to their subcategories and to test the relationships against the data (Corbin & Strauss, 1990). Codes were grouped to develop
preliminary concepts, and constant comparison of the data continued. During this step, the initial data was transformed into more abstract concepts, and categories were formed. The naming of categories, subcategories, properties, and dimensions distinguishes concepts according to prioritization. Properties are characteristics of categories and/or subcategories. Dimensions are ways the data may be differentiated along a continuum (Merriam & Tisdell, 2016).

The concepts were then placed into categories. The naming of categories was considered preliminary until the dataset had been thoroughly reviewed and analyzed, and not all concepts became categories. Categories are more abstract and are at a higher level than concepts (Corbin & Strauss, 1990; Merriam & Tisdell, 2016; Tie et al., 2019). During this step of the data analysis process, the researcher drew on previous experiences and began to question what the data was trying to say. This process is the stage where a hypothesis may be formulated (Corbin & Strauss, 1990; Merriam & Tisdell, 2016; Tie et al., 2019). A hypothesis is defined as “the suggested links between categories and properties” (Merriam & Tisdell, 2016, p. 229).

**Final Step.** This final step involved advanced coding or selective coding. Selective coding is the process by which all categories are unified around a “core” category, and incomplete categories are completed by adding further detail as necessary (Corbin & Strauss, 1990). The core category represents the central phenomenon of the study. This step is determined by asking “what is the primary idea of the research?” (Corbin & Strauss, 1990).

During this step, relationships were identified through sets of interrelated concepts. The categories were defined and given explanatory terms or statements. These explanatory terms or statements provide rich detail of the relationships between the categories, sometimes referred to as explanatory power. The data were then synthesized to add a further explanation of the
findings (Corbin & Strauss, 1990; Tie et al., 2019). A codebook was created and used to build the report findings.

**Analytical Team.** To thoroughly explore and exhaust all possible meanings associated with the coded data and text, an analytical team was assembled. It is advised to have a team review the coded data to assist with catching any inadvertently placed data in a category that does not belong (Corbin & Strauss, 1990). This team reviewed the transcribed data as necessary. The team met nearly every other week for 6 months to discuss and clarify what the data might be showing. The team listened to each other’s interpretations and feedback. After these meetings, this researcher created analytic memos to document the process of coding and concept development.

**Trustworthiness and Credibility**

The trustworthiness and credibility of this research study were generated by accurately and completely reporting the process used to obtain the information. The use of an analytical team aided in the rigor and trustworthiness of the data analysis process. Audio transcripts did not include any identifiable participant information. Hard copies of the interview transcripts and notes were kept in a locked file cabinet. The electronic data were stored in a password-protected computer. Pseudonym names were used for all participants during data collection, analysis, and reporting. Lastly, this research study was approved by the IRB (see Appendix A), and MDMH (see Appendix B), lending additional evidence to the trustworthiness and credibility of the research study.
Timeline

Recruitment of participants for this research began in April 2021 and ended in August 2021. The data were then transcribed and analyzed from April 2021 through October 2021. The research was completed in November 2021.

Summary

The purpose of this qualitative, descriptive research design using grounded theory methods for data analysis was to give a needed voice to rural women with SUD during pregnancy and to develop a new, deeper understanding of what they describe as motivators for wanting treatment. Hearing directly from rural women provides key information for healthcare providers and state and local government officials to consider how addiction treatment is developed and delivered to this special population of women.

Purposeful sampling was used for participant recruitment. Participants were selected based on specific inclusion criteria, including being pregnant or up to 5 years postpartum, residing in rural Missouri, and receiving treatment for addiction during pregnancy or postpartum. The research sites for this study included a variety of substance use treatment facilities and women’s shelters throughout rural Missouri. Semi-structured interviews were scheduled for 1 hour and were either audio recorded (phone call) or audio/video recorded (Zoom video conference) according to the participant’s written consent. Data analysis began immediately following the first interview using grounded theory methods.
CHAPTER 4: FINDINGS

Introduction

In this study, the experiences of rural women with SUD during pregnancy were documented and analyzed. This qualitative, descriptive research study aims to give voice to rural Missouri women with SUD during pregnancy using grounded theory methods for data analysis. The research questions concerned the experiences of rural women with SUD and their motivation for treatment.

The research questions were:

1. How do rural women describe their experiences with SUD during pregnancy and postpartum?

2. What are their motivations to seek and remain in treatment?

Data collection methods included semi-structured interviews with a sample of 17 participants from rural areas in Missouri. Interview data were analyzed using grounded theory methods. This chapter begins with the presentation of findings. Demographic data are presented followed by detailed descriptions of the analytic categories.

Demographic Data

Demographic data were collected during the interviews. A total of 10 demographic questions were asked to obtain information on age, race, level of education, town, relationship status, number of children (ages), who lived in the home, number of weeks pregnant (if pregnant), number of times entering treatment, and drug of choice. Figure 1 presents data specific to the number of times participants had been in treatment for addiction and substances used.

The participant ages ranged from 23 to 42 years old. The majority stated their race as white (n=16), with one African American (n=1). Their education level varied from fifth grade to
college: bachelor’s degree (n=1), some college (n=3), twelfth grade (n=9), eleventh grade (n=1), tenth grade (n=3), ninth grade (n= 2), sixth grade (n=1), and fifth grade (n=1). Participants resided in rural communities of southern Missouri (n=16) and western Missouri (n=1).

Relationship status was single (n=13), married (n=2), divorced (n=1), and separated (n=1). All but one participant had living children ranging in age from 2 months to 26 years. The number of children varied from one to eight. Living arrangements varied from living in a shelter (n=3), alone (n=3), with family/friends and no children (n=2), with children (n=3), with extended family/friends and children (n=3), with significant other (n=2), and with significant other with children (n=1). Finally, six participants were pregnant during the interview; gestation ranged from 14 to 35 weeks.

The number of times in treatment and substance use type were collected for all but one participant. Figure 1 illustrates data specific to the number of times the participant received treatment for addiction and the substances used. Incidences of addiction treatment ranged from one to 16. One session in treatment was the most frequent response (n=8). MA (n=12) was found to be the most common drug of choice (see Figure 2). Participant responses sometimes included more than one drug of choice. Inquiries about other substances used in the past revealed marijuana (n=7) as the most common response (see Figure 3).
Figure 1

Number of Times in Treatment for Addiction

![Bar chart showing number of times participants received treatment for addiction.](chart.png)
Figure 2

*Drugs of Choice*

**DRUGS OF CHOICE**

- Methamphetamines, 12
- K2, 1
- Heroin, 2
- Amphetamines, 1
- Alcohol, 1
- Tobacco, 1
- NA, 1

*Note.* The number listed after the drug of choice represents the number of participants.
Figure 3

Other Substances Used

Note. The number listed after the substance used represents the number of participants.
Categories Overview

Four analytic categories were developed to address the research questions. The categories were named: (1) “onset of use,” (2) “dynamics of addiction,” (3) “moods of addiction,” and (4) “motivating factors.” The first three analytic categories address the first research question: *How do rural women describe their experience with SUD during pregnancy and postpartum?* The fourth analytic category addresses the second research question: *What are their motivations to seek and remain in treatment?* Each analytic category is defined by subcategories, properties, and dimensions. Subcategories are used to further define the analytic category. Properties are characteristics of the subcategory. Dimensions provide further differentiation of the property on a continuum, for example, low to high.

The first category, the *onset of use*, was chosen as a conceptual label to describe the period in the participant’s life when they began using substances, including age they began using, the age they identified the SUD was an issue, and why they began using. This category is comprised of two subcategories: getting started and developmental maturity. The subcategories are further defined by properties: curiosity with friends’ experimentation and coping (getting started) and age SUD began and age SUD became an issue (developmental maturity). The properties are further distinguished by dimension (low or high degree). Table 5 outlines category 1.
Table 5

*Category 1: Onset of Use*

<table>
<thead>
<tr>
<th>Subcategories</th>
<th>Properties</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting started</td>
<td>Curiosity with friends</td>
<td>Low to high degree of curiosity with friends’ experimentation</td>
</tr>
<tr>
<td></td>
<td>Experimentation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coping</td>
<td>Low to high degree of coping</td>
</tr>
<tr>
<td>Developmental maturity</td>
<td>Age SUD began</td>
<td>Low to high degree of age SUD began</td>
</tr>
<tr>
<td></td>
<td>Age SUD became an issue</td>
<td>Low to high degree of age SUD became an issue</td>
</tr>
</tbody>
</table>

The second category is the *dynamics of addiction*. This category was chosen to demonstrate what life was like for the participants during active addiction and the treatment period. This category is comprised of three subcategories: loss of control, view of self during addiction treatment, and encounter with provider disengagement. The subcategories are further defined by properties: setting priorities, compulsiveness, and inability to stop using substances (loss of control); questioning of identity, accountability, acceptance, and insights (view of self during addiction treatment); and disavowal of the SUD, and false assumptions left uncorrected (encounter with provider disengagement). The properties are further distinguished by dimension (low or high degree). Table 6 outlines category 2.
Table 6

Category 2: Dynamics of Addiction

<table>
<thead>
<tr>
<th>Subcategories</th>
<th>Properties</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of control</td>
<td>Setting priorities</td>
<td>Low to high degree of priorities</td>
</tr>
<tr>
<td></td>
<td>Compulsiveness</td>
<td>Low to high degree of compulsiveness</td>
</tr>
<tr>
<td></td>
<td>Inability to stop using substances</td>
<td>Low to high degree of inability to stop using substances</td>
</tr>
<tr>
<td>View of self during addiction treatment</td>
<td>Questioning of identity</td>
<td>Low to high degree of questioning of identity</td>
</tr>
<tr>
<td></td>
<td>Accountability</td>
<td>Low to high degree of accountability</td>
</tr>
<tr>
<td></td>
<td>Acceptance</td>
<td>Low to high degree of acceptance</td>
</tr>
<tr>
<td>Encounter with provider disengagement</td>
<td>Insights</td>
<td>Low to high degree of insight</td>
</tr>
<tr>
<td></td>
<td>Disavowal of the SUD</td>
<td>Low to high degree of failure to acknowledge the SUD</td>
</tr>
<tr>
<td></td>
<td>False assumptions left uncorrected</td>
<td>Low to high degree of false assumptions left uncorrected</td>
</tr>
</tbody>
</table>

The third category is *moods of addiction*. This category was chosen to demonstrate the patterned emotional responses to their SUD. This category is comprised of three subcategories: responses to stress and grief, responses to gratitude, and responses to regret. Properties were identified for each subcategory: family problems, trauma, and daily life (responses to stress and grief); pessimism (low to high degree), negative behaviors, and denial (responses to addiction challenges); and connectedness, contentment, and perseverance (responses to gratitude during recovery). Furthermore, the property of pessimism is distinguished by a second dimension: self-directed pessimism and other-directed pessimism. *Self-directed pessimism* refers to the participants’ thoughts and feelings toward themselves. Other-directed pessimism refers to the participants’ thoughts and feelings about other people or a situation. Table 7 outlines category 3.
Table 7

Category 3: Moods of Addiction

<table>
<thead>
<tr>
<th>Subcategories</th>
<th>Properties</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responses to stress and grief</td>
<td>Family problems</td>
<td>Low to high degree of pain from family problems</td>
</tr>
<tr>
<td></td>
<td>Trauma</td>
<td>Low to high degree of suffering from trauma</td>
</tr>
<tr>
<td></td>
<td>Daily life</td>
<td>Low to high degree of pressure from daily life</td>
</tr>
<tr>
<td>Responses to addiction challenges</td>
<td>Pessimism</td>
<td>Low to high degree of pessimism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-directed to other-directed</td>
</tr>
<tr>
<td></td>
<td>Negative behaviors</td>
<td>Low to high degree of negative behaviors</td>
</tr>
<tr>
<td></td>
<td>Denial</td>
<td>Low to high degree of denial</td>
</tr>
<tr>
<td>Responses to gratitude during recovery</td>
<td>Connectedness</td>
<td>Low to high degree of connectedness</td>
</tr>
<tr>
<td></td>
<td>Contentment</td>
<td>Low to high degree of contentment</td>
</tr>
<tr>
<td></td>
<td>Perseverance</td>
<td>Low to high degree of perseverance</td>
</tr>
</tbody>
</table>

The fourth category is motivating factors. This category was chosen to demonstrate the participants’ motivation for seeking and completing addiction treatment. This category is comprised of three subcategories: personal aspirations, support systems, and organizational systems. Each subcategory is further defined by properties: the children, freedom from drugs, and confidence (personal aspirations); groups, counseling staff, and family (support systems); and justice system, drug court, and Division of Family Services (DFS; organizational systems). The properties are further distinguished by dimension (low to high degree). Table 8 outlines category 4.
Table 8

*Category 4: Motivating Factors*

<table>
<thead>
<tr>
<th>Subcategories</th>
<th>Properties</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Aspirations</td>
<td>The children</td>
<td>Low to high degree of desire to be with the children</td>
</tr>
<tr>
<td></td>
<td>Freedom from drugs</td>
<td>Low to high degree of desire to have freedom from drugs</td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
<td>Low to high degree of confidence</td>
</tr>
<tr>
<td>Support Systems</td>
<td>Groups</td>
<td>Low to high degree of support from groups</td>
</tr>
<tr>
<td></td>
<td>Counseling staff</td>
<td>Low to high degree of support from counseling staff</td>
</tr>
<tr>
<td></td>
<td>Family</td>
<td>Low to high degree of support from family</td>
</tr>
<tr>
<td>Organizational Systems</td>
<td>Justice system</td>
<td>Low to high degree of involvement with the justice system</td>
</tr>
<tr>
<td></td>
<td>Drug court</td>
<td>Low to high degree of involvement with the drug court</td>
</tr>
<tr>
<td></td>
<td>DFS</td>
<td>Low to high degree of involvement with DFS</td>
</tr>
</tbody>
</table>

The next sections of this chapter describe the four major categories in detail.

**Category 1: Onset of Use**

Participants shared their stories about life events that were occurring during the time they began using substances. These life events represent why the participants believe they began using substances. They identified the age they first used substances. Participants also identified the period between the initial use and when they identified the substances as a problem.

**Subcategory: Getting Started**

This category encompasses the entry into substance use. It is important to understand why the participant chose to use substances. Twelve of the 17 participants began using
substances as a way to cope with a life-changing event. One participant did not share a reason why she began using substances.

**Property: Curiosity with Friends’ Experimentation.** Curiosity is the interest in trying substances because of friends’ experimentation. Six of the 17 participants chose to begin using substances out of curiosity. One participant said she was curious because her friends were using drugs: “I just was a curious teen I think. And my friends did it too. So, I thought you know let’s go try too” (Ruby, lines 217-218). Jess began using MA out of curiosity because her ex-husband used drugs:

I used meth with my ex, which is actually my current husband. It was back when I was in college and he was an active user and I didn't even....... I didn't even know what it looked like. But, slowly but surely, he [ex-husband] ripped our relationship apart. And after I broke up with him and left him I started to wonder what is this drug that ripped us apart? And it kind of fell into place from there (lines 99-103).

Mary said, “I just shared it with my friend” (line 81). Shirley began using substances by herself and sometimes used with friends. She did not have a reason for why she began:

Mainly myself and sometimes just friends I use to hang out with (line 93). This is the way I told my counselor. I really didn't have any reason or triggers or anything, I just started.

I don't know how to explain it really (lines 98-99).

Irina began using for no particular reason but was concerned with continued cravings after she gives birth: “I just try it. I can say I didn't like it, but I’m scared after the baby maybe I will wanna smoke sometimes, and I really don't want it” (lines 59-60).

Nicole was exposed to substances throughout her childhood. She became curious and had a desire to fit in with those around her daily:
I think it was more so the fact that I grew up with people around me that were doing it. So, I wasn't completely oblivious to it. And so, therefore, I feel like my anticipation grew as I got older because I would always see them doing it and I thought it was cool. So, like, I wanted to fit in. I feel like it was like one of those moments where the curiosity killed the cat and it just…… I always said I wouldn't do it, but people around me did it as I was growing up. I got curious one day and I tried it, and I kind of liked it from time to time. So, therefore, it led to even harder choices (lines 169-175).

**Property: Coping.** Coping are ways in which participants attempted to manage various difficult life events. Eleven of the 17 participants began using substances to cope with stressful or tragic life events, such as the death of a family member, trauma, abuse, family problems, and anxiety. Two participants were coping with the sudden loss of a parent at a young age. When Krys’ dad passed away, she began using MA.

I started using almost seven years ago. My dad's been dead almost seven years and that's what actually started me using the MA was when my dad passed away. I feel like, you know, I didn't have nobody to talk to so I started getting high (lines 111-114).

Sarah’s mother died in an automobile accident:

I lost my mom at a young age, at 14. And my father at the time, my father lived in Texas so I still stayed here in Missouri. I didn't know my real Father and I took care of my baby sister and help raise her after my mom passed away. So, I had to grow up real young (lines 95-98).

Two participants turned to substances to help them cope with traumatic life events. Kate had been gang-raped by three men when she attempted to buy heroin for her girlfriend. Kate’s girlfriend offered her heroin to forget about her traumatic experience:
In 2017, is whenever I tried...... It’s whenever I realized I had a problem. Um, I tried heroin for the first time after a traumatic experience, just to forget everything and as soon as I did it I knew that I was not going to be able to stop. That was the very first time (lines 82-84).

Elaina was suffering through a difficult time in her life and she began using marijuana. When asked to explain this difficult time in greater detail she was unwilling to discuss specific events. However, she was willing to share her story about being introduced to MA:

But, about last year when I got on meth...... I want to say a few months after that, that’s when I realized it’s causing issues and all, that’s when I started to seek out for help (lines 127-130). I went through a really bad time, and at the time I was with somebody totally different and he was using it. I want to say it was peer pressure. And I just, I felt like everything was just falling apart in my life at the time. I decided to try it and I regret it every day (lines 155-157).

Four of the participants said they turned to substances as a way to cope with abuse and family problems. D. W. had suffered a life of family problems and abuse by her mother and aunt: “Just abuse and family problems. And that’s what started the meth a few months ago too was the abuse and family problems” (lines 115-116). Savanah said she began using substances as a result of her parents’ divorce, an unsupervised childhood, and her mother’s battle with SUD. She described several reasons for using substances.

I think just really my parents got divorced, and my mom just let me do whatever I wanted pretty much, and I got with the wrong crowd (lines 109-110). My mom was also on meth. So, she would pay me to babysit my brothers with meth (line 114).
Denise and Peaches also began using substances as a result of family problems and years of abuse: “I had a very traumatic childhood. I was molested a lot. So, I just had a real bad childhood” (Denise, lines 111-112). Peaches grew up in an unstable home environment:

My uncle had been sexually inappropriate with me and then like just like growing up in a shifty household. (line 113-114). My dads changed when I was in third grade. And my dad from there on out was very angry. He never hit or anything, but I just wasn't used to the discipline of it. So, it was just like a shock to me. Then my mom and dad later on once I was a teenager fought a lot. Never anything out on me, but just listening to them fight all the time was enough (lines 118-121).

Tara suffered from severe physical injuries due to a car accident. She was prescribed opioids to manage the pain. Tara became addicted to the pain medication and began illegally seeking pain medication on her own. Eventually, Tara replaced the pain medication with heroin. “I was actually in a pretty bad car wreck. And they had prescribed pain pills. And the pain pills actually weren't doing it in the end. So, I just I went from the pain pills to the heroin” (lines 123-124). Ruby and Louisiana did not experience a traumatic life-changing event. Instead, they using substances to cope with usual stressful life events. Ruby began using marijuana to calm herself before she did anything:

I always had marijuana, and I would smoke before work. I would smoke before school. If I could, I would smoke before church and stuff like that. Like it wasn't big amounts, because you know, I was still like a teenager. But I just felt like in my head, I always had to have it to calm my nerves, you know before I did anything (lines 209-212).

Louisiana found herself with feelings of overwhelming stress as a result of being a single parent: “Being a single mom and I was tired and just had a lot going on in my life, and I just wanted to try it for the first time, and one thing led to another, and it was just a big mess” (lines 171-172).
Subcategory: Developmental Maturity

Developmental maturity signified the span between age at onset of use to the age at which the substance use disorder was recognized as an issue. Eleven of the 17 participants began using substances during their teen years. One participant did not provide an exact age for when she began using substances, but stated it started during high school. Overall, the participants had a mean age of 4.8 years and a median age of 9 years before they realized their substance use was a problem. (The developmental maturity information was not obtained from one participant).

Property: Age SUD Began. Eleven of the 17 participants began experimenting with substances during their teenage years. The mean age of first use was 16.6 years when they first used substances with a median age of 16.5 years. Ten participants were between the ages of 13 and 19 years when they used substances for the first time. One participant said she was in high school when she began using substances but did not specify an age. Four participants were in their twenties when they used substances for the first time. Two participants were in elementary school and middle school when they first used substances, at 9 and 12 years old. (Age of first use was not obtained from one participant).

Property: Age SUD Identified as Issue. Participants described their experience with DFS removing their children from the home. Involvement with DFS is an example of a sudden life-changing circumstance. This topic is discussed later in this chapter under the category of motivating factors.

The age at which participants identified when their SUD first became an issue ranged from 15 to 32 years, with a mean age of 21.8 years and a median age of 23.5 years. The period from first substance use to when participants identified that their SUD was an issue was 0 to 9 years, with a mean period of 4.8 years and a median period of 9 years. Consequently, it took the
participants nearly 5 years to realize their SUD was an issue from the time they began using substances.

Summary

A majority of the participants (12 of 17) began using substances as a way to cope with life events, including the death of a close family member, trauma, abuse, and family problems. The mean age they began using substances was 16.6 years old. The next category discussed will be the dynamics of addiction.

Category 2: Dynamics of Addiction

The dynamics of addiction encompassed what life was like for the participants during active addiction and the treatment period. The treatment period was a time of reflection. Participants explained in detail their loss of control and how they viewed themselves during this time. They also described the kind of conversations and lack of conversations that developed from their prenatal care visits regarding SUD and pregnancy.

Subcategory: Loss of Control

Loss of control signified lives overrun by substances. Participants shared that during active addiction their priority in life was the addiction. The participants explained a desire to stop using but were unable to do so because the addiction was so strong. Addiction made everything else in their life feel impossible.

Property: Setting Priorities. The substance use behavior took precedence before anything else in their life. Addiction was found to be the participants’ top priority in life. Addiction came before their children and other responsibilities. Krys explained that her addiction always came first:

You put your addiction before everything. It doesn’t matter what it is, if you want to get high you’re gonna put it before your kids, you're gonna put it before your family, you're
gonna put it before your responsibilities in your house, like cleaning, even taking care of your animals, like you put everything second, you're going to put it before you're.......yeah, so that comes first (lines 91-97).

Louisiana described her life with addiction as losing control, not caring, and losing everything because of her addiction. “Not having control over my life, and what I do. Not caring about anything, because I mean, I've lost....... I lost everything and then, now finally got everything back” (lines 120-121). Kate said people tried to scare her so she would stop using drugs. Unfortunately, the scare tactic did not make her stop using:

People would tell me just think about it, every time you shoot up you're shooting your baby up. And at first, that worked. At first, that's what was scaring me, but then I just didn't care. I would cry sometimes shooting myself up because I would think about it but, I still did it (lines 328-330).

Tara described addiction for her as losing control over her everyday life. “To have an addiction means to be dependent on a substance; I feel like. Basically, that's more or less it. To be addicted would be for something having control over my everyday life actually” (lines 98-100).

Elaina, Jess, and Denise describe having their priorities mixed up and losing their children or not caring that their children may be harmed because of their addiction. For example, one participant stated, “I lost my kids. I lost them because I got addicted to drugs. I lost my...... most of my family disowned me. I lost my home. It just.... drugs turn your life upside down. It doesn't make it better” (Elaina, lines 99-101). Another stated, “The fact that I was pregnant didn’t faze me at all” (Jess, line 167). Denise described her experience as, “Where I really noticed it getting out of control was when I was losing my children to the situation” (lines 140-141). Nicole and Peaches explained the losses they experienced with addiction. Their losses
were a direct result of putting their addiction first over everything else in life. Nicole said she lost focus on everything around her:

I did a lot of bad things. I just felt like I didn't care about anything but myself at the time. I lost complete focus on everything that was going on around me and I was just like so self-absorbed in my addiction that I didn't really pay attention to anything else (lines 113-116).

Peaches described her experience as:

I’m choosing drugs over anything that means something to you in life. Some people are able to hold their life together during it, but usually, your life falls apart. You lose a lot of things that mean a lot to you. So, financial instability, poverty, things like that” (lines 88-90).

**Property: Compulsiveness.** Compulsiveness entailed a complete loss of control. Some described a phenomenon similar to an out-of-body experience. Their desire to use substances was so strong that they were somewhat unaware of their actions. They went to any extreme necessary to get the substances they choose. They often felt that they had no choice, but to use substances.

Louisiana said, “I just wanted to do it again and just did it” (line 163). Kate described a feeling of helplessness and having a noose around her neck:

In my own experience with addiction, it's really.... you have no control over it. Like you know it's wrong, and you know what’s right but, you can't.... you can't help it. Like when, for example, when I was pregnant, it does not feel good to do drugs and still know that you have child in you and you feel her, but I cannot control that part of my brain. So, addiction to me is it feels like a noose around my neck, like chains. Like I’m chained up in a box that I can't get out of (lines 72-76).
Tara was willing to face the risks of elective oral surgery to continue her SUD of prescription pain pills:

I even went as far as having a tooth pulled just for pain pills. There was nothing wrong with the tooth at all, but you know the doctors prescribe pain pills. So, that was one thing that was a problem. That made me realize I had a problem (lines 128-130).

Mary described the compulsiveness of her addiction as not having a choice. It’s like something has control over you. I know everybody always says that it’s a choice, but there's been times in my life that addiction was not a choice. It was a part of me. It’s consuming and it just takes everything from you (lines 100-102).

Nicole explained her desire to want to feel the same way all the time:

It means for me addiction is.... For me of course it’s a choice. It's followed by constantly wanting to feel the same way that you did at that time. It's like whenever somebody is really thirsty and they drink water, it's relieving. It's almost the same effect for somebody who has constantly abused the same things. So therefore, it feels like normal for them to do it. So therefore, they're caught up in the disease of thinking they need it to survive. But it's all about the mindset and trying to overcome it, and knowing that you don't need it (lines 96-101).

Irina appeared detached from her life with addiction. She did not answer the questions about addiction as she sees herself; rather, she described how she views others with addiction and their setting priorities. During the interview with Irina, she often denied having an addiction but did admit to having an addiction at one time. When Irina was asked to explain what addiction meant to her, she described the way she experienced addiction behaviors of other people. She did not mention what living with addiction was like for herself. Irina detached herself from her addiction.
They change their mood very very fast because they don’t have that and they are acting different they’re acting aggressive. So, for me, this is like an addiction, when you just cannot live without the drug no more. They’ve been searching it and searching like crazy until they get it, and even if they don’t have money (lines 75-78).

**Property: Inability to Stop Using Substances.** The property inability to stop using substances meant that even though they wanted to quit, they were not able to do so on their own. For example, Krys shared her desire to pursue a better job but was unable to because of her substance use. She explained how she stopped one substance but picked up a different one:

> I quit smoking marijuana because I was working in fast food, and I was tryin’ to find a better job, because in most places now you got to have a high school diploma or GED, or you know, pass a drug test. So, I quit smoking marijuana and started smoking K2 (lines 75-77).

Louisiana had a desire to stop using for fear she was hurting her unborn baby, but she was not able to stop on her own. Louisiana said, “Because it's like, I wanted to stop using, but I couldn’t. And I know it's hurting the baby because he wasn't getting all…. everything that he needed” (lines 478-479). Kate stopped attending her prenatal care visits because she could not stop using substances. Kate was fearful of having a positive drug test at the doctor’s visit:

> So, I kept telling myself, you know, well, I would reschedule my appointments because I would be like okay, this is my last day using drugs I’ll just go a week without using drugs and then go to my next appointment and I’ll pass the drug test. I could never get to that point, so I just stopped going to my prenatal care around the third or fourth visit (lines 260-263).

Savanah had been in treatment a total of 15 times for her addiction. She realized this last time that when she drinks alcohol it triggered her MA use:
And that's when I realized I needed to do something, because I was going backwards.

And that my drinking was taken over again, and when that takes over I start doing meth.

So, that's not what I wanted to do, so that's why I’m here (lines 205-208).

Jess described her experience as binging: “In my mind I can do it with this person and be okay, just this one time, but it's never just this one time. It turns one night into a binge of a week” (lines 519-520). For Mary, having a child at age 15 was not enough to stop her from wanting to continue abusing substances. Mary explains, “I had my first child at 15 and I couldn't quite gettin high” (line 107).

The above statements demonstrate how difficult life was for the participants when trying to manage their substance use while carrying on with their lives and raising children. A life controlled by substance use is an out-of-control life.

**Subcategory: View of Self During Addiction Treatment**

View of self during addiction treatment was chosen to describe the thoughts and feelings of the participants during their time in treatment for addiction. Participants shared a desire to know themselves better while free of substances. They described their belief of being responsible for all they have lost in life because of the choices they made to use substances.

**Property: Questioning of Identity.** Questioning identity refers to the participants’ questioning who they are. They were not confident that they knew themselves now that they were free of substances. They describe a yearning to understand “who I am.” Additionally, they explained a belief that their previous life of trauma and SUD defined who they were now. The participants found themselves struggling to understand who they were while living sober. Kate explained that she was not clear about who she was during active addiction or during recovery. She had a strong desire to know who she was now that she was in treatment:
I did not know who I truly was and I did not know what was going on around me (lines 433-434). I want to gain myself back and get my confidence back so I can be stable and truly know who I am (lines 228-229).

Krys believed her addiction has defined who she is today. “It's definitely made me who I am today because I’ve learned...... I've learned so much through my recovery” (lines 155-156). Tara described her time in jail as an opportunity to focus on herself and find out who she was. “Not only did I get a chance......a timeout just to focus on me and find out who I was really” (lines 141-142). Mary described the time in her life that she began using MA during pregnancy and could not stop her drug use. She said, “That’s when it [the drug use] became like who I was” (line 108). Conversely, Denise felt confident about her identity. She believed her addiction defines who she is today.

I think it [addiction] gave me great insight on things and um, I just feel like my addiction is part of who I am. Without it, I wouldn’t be the person I am right now. And the person I am right now, I’m starting to look forward to (lines 367-369).

Lastly, D. W. describes a different situation of identity confusion. She had experienced a traumatic life of abuse by her family. D. W. was seeking treatment as a result of her addiction and trauma. She was hopeful treatment would change her thoughts about a trauma-defined life. “I’m tired of letting like my trauma define who I am and making me live this... the drug toxic cycle and end up like the rest of my family” (lines 157-158).

**Property: Accountability.** Accountability refers to recognizing and taking responsibility for the results of their addiction, i.e., the situations and consequences brought about by active addiction behaviors. Through a reflective process while in treatment for addiction, they realized that life as they know it was a direct result of their actions while actively engaging in addiction behaviors.
Ruby took accountability by discussing that she neglected her children, who were removed from her home by DFS:

I guess, in some ways, they were neglected, because I could have always done better for them” (lines 171-172). I guess, in a subconscious way I [was] punishing myself or letting myself know this is…… this is not how it was supposed to be. You know you got here for a reason. You know I didn't want to just pretend like it's gonna you know…. come home and be happy when my kids weren't there. I didn't go home and cry every night I just I used to my own living like a bachelor for like a year and a half (lines 501-505).

Tara, Savanah, Elaina, and Nicole all took accountability by willingly making the decision to seek help for their addiction on their own. Two participants chose to place their children in the care of others because they knew they were not able to care for them. Tara requested to enter treatment after her son was removed from her home:

I put myself in the treatment after they come and took him. I was pretty much helpless at that point and admitted to my counselor…. you know. I actually told my counselor I said look, I relapsed and I needed to be put into inpatient, and so we did that kind of immediately (lines 328-331).

Savanah was concerned for the safety of her children: “I asked the judge to take my kids and to put them in a safe place so I can go to treatment because I knew things were really out of control” (lines 312-313). Elaina also asked to be placed into treatment:

I signed up willingly on outpatient. I actually didn't even have drugs in my system at the time, because I quit. And they took me anyways in outpatient, because I told him I just wanted help. And I wanted support so I could be around people that started to stay clean for my children (lines 215-218).

Nicole recognized her vulnerability to addiction and reached out for help:
Recently during the course of finding out being pregnant I had a lot of temptations to want to use again, and so I made sure I had an outreach to talk. So that way I didn't, because I’m currently almost a little over three years from not using and it was by myself. So, it's gotten a little bit trickier now (lines 51-54). I was addicted to drugs before I got pregnant with her and stopped during the course of the pregnancy. Afterwards, I had relapsed and placed my daughter with my father who actually adopted her. I made sure that she was safe because I knew I wasn't going to be able to be the parent that she needed due to my addiction being in the way (lines 69-72).

Denise’s situation was different. She knew she was pregnant with her last baby. She had a strong desire, to be honest, and recognized the strength in accountability:

With this being my last shot, I was really honest about everything. I felt like accountability was really important. Also, knowing that I had all these people that were looking for me to do the right thing, [including] myself. My child was the most important, but it just gave me more, you know, kind of a village. More people to be accountable to (lines 255-258).

Property: Acceptance. Acceptance means a willingness to move forward in life without questioning why certain life events had happened, and the concept gives an additional explanation about the participants’ view of themselves during addiction treatment. Their statements reflected feelings and beliefs of accepting their life circumstances the way they are presented. They were open to accepting life as they know it right now.

Krys and Ruby discussed acceptance regarding having their children removed from the home. Krys shared that she was still sad when she thought about her children being taken away but she was accepting of the situation. “It's, I mean still today, no matter how much I have accomplished. It’s still one of those things that today bothers me a lot. It still hurts, no matter
how much I have accomplished” (lines 244-246). Ruby reflected on the time she was alone in her home and her children were in the custody of DFS:

Looking at me just like when they were taking her I got used to the comfortable silence and the quietness in house. Because I wanted to know they're not here, I didn't like it at first, but I didn't want to surround myself with noise and being busy. I wanted to know that this is not happy, this is not my happy place the fact that they were not home for so many months (lines 488-491).

Ruby was also accepting of her decision to regain custody of her children, despite earlier feelings that the children would be better off with the foster parents:

Well, my foster parents, this last time are really good people. They go to my church and there's times when I thought they would be better off with them but I knew that wasn't the case because they belong with me (lines 516-518).

Jess described having acceptance during a time her children were removed from the home. “The first time I was okay with it because I knew what was going on at my house and I knew that it wasn't a good place for them” (lines 313-314). Mary described how she accepted the need to set boundaries with her brother:

My brother, I've learned to set boundaries with him. Because he's always been like my sidekick, but I can't always be there when he needs me. I always want to try and rescue him but I can't, because he doesn't want to do it (lines 223-225).

Shirley explained being at peace with her decision to give her child up for adoption. She accepted the fact that she was unable to properly care for him. “I did care for him pretty good. I was just in a bad situation, wrong place wrong time” (lines 209-210). “I didn't have a place, and didn't have a job at the time. So, you know, he was better off” (lines 214-215). Peaches
described her situation of being in treatment and away from her children. She is accepted all the requirements to regain custody.

It's all right in the sense that I am ready for it. So, like things are going really well, but there are uncomfortable aspects of it, you know, being sober and being away from my kids which is insane to me. But I know, that I'm doing everything to be able to see them again (lines 142-144).

**Property: Insights.** Insights are reflective of the participants’ feelings while they were in treatment for addiction. The participants used words such as, “relief,” “nervousness,” “embarrassment,” and “scared” to describe their addiction treatment experience. Additionally, they shared their feelings of what led them to take their addiction treatment seriously. Sue described feelings of relief when she was in treatment:

> It sucks because you know you're pregnant and there's something telling you that makes you want to…. using you know you're pregnant and it's harmful to the baby but. So, when you’re in treatment, it's relief (lines 115-118). I remember laying in detox bed and thinkin, it's all gonna be ok now (lines 143-144). When you're lying there in the detox bed you say, I’m here, I’m safe (lines 156-157).

Krys and D. W. had strong feelings about the need to be serious while in treatment:

> If you’re not serious about trying to change your life, then you might as well turn around and walk out that door! Because, there ain't no sense in you wasting your time or any of these women's time that's actually trying to help you that care (Krys, lines 482-486).

D. W. credited being pregnant as the reason she was serious about treatment:

> It was more emotional I think, versus if I would have went when I wasn't pregnant. Um, it made me just really.... like it just really made me see things. Versus I think.... actually, I
guess it made me more opt to staying sober. Like if I wasn't pregnant and went, then I
probably wouldn't have stuck it out (lines 125-128).

Kate provided a vivid description of what life was like for on her way to treatment and
during treatment. Kate felt as if she was an outsider while in treatment:

I was really nervous; I ended up leaving early. But, um I was the only pregnant girl there,
I just felt really left out. Like really…. it's like I stuck out. So, I ended up leaving early. I
really didn't get much out of the treatment because, like I said, it was a faith based and
we just ended up going to church and volunteering the whole time. So, I really wasn't
getting the help that I needed. So, I ended up leaving early (lines 131-135). Going to
rehab is when you get as high as you can before you go. And that's what I was doing. I
went full-fledged like on the way to rehab. I was getting as high as I could really. And
that's not a good idea, because you don't remember any of the rules that they tell you
the first day (lines 166-169).

Elaina and Mary described being nervous and scared when going to treatment for the
first time. Elaina said, “I was embarrassed” (line 207). “I was nervous. I didn't know what to
expect” (line 211). Elaina also provided her insights into how she was feeling after completing
addiction treatment. “It's amazing! I’m a totally different person with without all that. I feel like
I’m more motivated. I feel better. I accomplished more things. I’m very proud of myself” (lines
238-239). Mary’s experience was similar to Elaina’s in the fact that she felt scared, although
most of Mary’s treatment experiences were a result of being in prison. She describes her
experience with delivering her baby while in prison:

It was very scary. I thought everybody judged me. I actually had a child in prison, in
prison treatment. Um, it’s a very life changing event (lines 122-123). It was really scary
like they shackle you to the bed still even with the epidural. You get whatever time they
need to check the mother out before you go, and they take the baby from you, they put you back in your orange jumpsuit, and they wheel you back like you never even had a baby (lines 127-130).

Nicole described her belief that if she had not have gone to treatment she thinks she would not be the person she is today. She gave credit to the things she learned in treatment for how well she is doing today:

If I would have just kept living lives and not seen it the way that I did I wouldn't have the mindset and the motivation to stay clean like I do now, because I feel like some people who have addiction problems later on in their life it's harder for them to stop. I’m just thankful that I’m 23 and I’m still alive. I’m watching a lot of my friends all behind me going to funerals more than twice a year. It’s sad to see those people and I’m glad to say that I don't believe I’ll be one of those (lines 368-373).

Irina shared that she had an open mind toward her treatment: “I felt very relaxed. Very confident. I’m very open to share what I feel and how I feel with people that are really specialized in helping me” (lines 252-253). Denise described her feelings about the treatment process when she was in prison and when she made the decision to seek treatment on her own.

She offered both positive and negative insights during her time in prison:

I really didn't have any feelings, because it wasn't by my own accord. It was because I had to go because I was on probation for all and I dropped it there. So, to me I would say, at least the first six times, it was just a routine and was never no feeling of anything, because I had been locked up. You know in prison, it's just a whole bunch of people, so this was just something else I had to go through in order to get my complete freedom. There was never one time that I actually paid attention or listened (lines 176-181).

Denise shared a story of positivity when the decision to seek treatment was hers:
I just remember like being relieved, being determined. Just making all kinds of plans, making a bond and an agreement with God that I was going to see it through this time. I just felt relieved not to have all that on me, it was make-up time for me. I had waited so long in life to get to this point now. Everything for me is make-up time. It was kind of stressful too because I knew, and I still do have a journey ahead of me in order for me to get where most 42-year old’s are already at (lines 194-199).

**Subcategory: Encounter with Provider Disengagement**

Encounter with provider disengagement was chosen as a conceptual label because of the manner in which participants described prenatal care visits with their obstetric healthcare providers. Many of the participants shared that their healthcare providers never had conversations with them about using substances. Some of the participants told the healthcare providers they had an addiction but the provider still ignored the issue. A few of the participants described a more positive experience.

**Property: Disavowal of the SUD.** The participants experienced silence from their healthcare providers when trying to discuss their issues with addiction. A few of the participants felt that the healthcare provider did not have time for them, which is why they believe the topic of addiction was never discussed. Some healthcare providers avoided all discussions about addiction, never engaging in conversation about addiction with the participant. Ruby never told her healthcare provider that she had an addiction:

I left it as an unspoken thing (line 360). There were times when they say you need to quit smoking and I knew what they meant, but that's how…. that's as far as it went (lines 364-365). I think, with my daughter they did know, I was going to the WIN program so they just left it at that like she's getting help, hopefully that will do some good (lines 402-403).
Louisiana did tell her healthcare provider that she had an addiction. The response she received from him was not expected: “He looked at me and he said, I’m not gonna call the hotline. He said, you got 20 weeks to get clean, and whether you do or you don't it's not none of my business” (lines 315-316). D. W. said, “No, he hasn’t asked me since I got out of treatment” (line 240). Tara described a feeling of being rushed in and out of her appointments and never having time for a conversation. She explained that if they chose to not talk about addiction then she was able to remain in denial:

It’s kind of an in and out type of deal. Just making sure everything's okay. You know, making sure nothing extremely emergency wise is needed and that you're not bleeding out. They’re getting you in and getting you out. So, there was really no heart to hearts to speak of, or anything of that nature during the during the doctor's appointments (lines 295-299). It was really not talked about at all. And I was too embarrassed or in denial, I guess I would say to bring it up myself. I thought if he didn’t say anything about it, and I didn’t say anything about it, then it wasn't really happening (lines 321-322).

Savanah never discussed her addiction with her healthcare provider because she feared she would lose her children:

No. I was scared they would take him from me (line 347). I never spoke about it. And when I went, I made sure that I was clean so they couldn’t call DFS (lines 388-389). Because when you're an addict and you have a baby......like I love my children you know very much and that's a hard thing to tell a doctor. Because you know you're gonna lose your child. Period. That's just the way it is (lines 428-430).

Elaina’s healthcare provider asked her about using substances during one of her first appointments. Her provider gave her a pamphlet and never mentioned substance use again. Elaina was honest and said she did have an addiction:
Yep, they asked me in the beginning when I was pregnant. They asked me if I’d ever done any drugs before. I said before I was pregnant with him I used to smoke weed, but they could see that I wasn’t using any now. And they told me if I was thinking about it, they gave me a pamphlet that if I did use it, it had all the side effects and all (lines 341-344).

Irina did not have any conversations with her provider about substance use:

I didn't have too much time with my OB doctor. Like I said, I’m not the only one, and maybe they saw my pregnancy going really well and there was not nothing about to worry so much (lines 268-270). Deep deep conversations about this, we didn't have (line 278).

Peaches admitted to her provider that she used marijuana for nausea. “A little bit about smoking pot. He was pretty kosher with it. He said only to use it for nausea and not anything beyond that because there would be legal issues” (lines 248-249).

**Property: False Assumptions Left Uncorrected.** False Assumptions Left Uncorrected is a distinguishing aspect of provider disengagement. Participants had several false assumptions during conversations about discussing addiction with their healthcare provider. For example, some of the participants believed they were drug tested with every prenatal care visit. Some participants believed their children were born perfectly healthy but described situations where their children had to remain in the hospital after birth. They did not understand that their children’s behavior problems were a result of their addiction. These false assumptions have not been corrected by their healthcare providers.

Ruby believed she was drug tested every time she went to her prenatal care visits. “As you know when you go to the doctor prenatally they make you every time, pee in a cup anyway, so they knew” (lines 360-361). Also, she believed that her children are healthy because they
were not born addicted to the substances she used. “I’m not saying it’s a good thing, I’m just saying when they were born they’re healthy they weren’t addicted or nothing like that” (lines 362-364).

Similar to Ruby, Kate also believed that she was being drug tested every time she went to her prenatal care appointment. “And, when I went to my third appointment…. and they do lab work every time you go I realized that I could not pass the drug test and they were going to drug test me every time” (lines 255-257). Kate was under the false assumption that her baby was healthy if she could hear the heartbeat. She also believed that her daughter was healthy because she was no longer in the Neonatal Intensive Care Unit (NICU):

Actually, every time I would go to my appointments I would make sure that my daughter was okay, like I would hear the heartbeat and then I actually would leave afterwards, so I didn’t have to talk to the doctor. I just wanted to make sure that her heartbeat was fine and then everything else was okay. Then after I did that I left so I didn’t have to talk to the doctor (lines 268-271). She was in the NICU for a long time and she’s fine now, she's healthy (lines 315-316).

Sarah, Tara, and Savanah all were under the false assumption that they were drug tested with each prenatal care visit:

She wanted to make sure I wasn't using and stuff like that. They would do routine blood stuff, I’m sure they tested for drugs too, but they also whenever I had the baby at hospital they tested the meconium and stuff like that to make sure I didn't use while I was pregnant. They take certain measures and stuff just to make sure, because of my case being open prior to the other kids (Sarah, lines 285-289).
Tara said, “I mean, he obviously knew that I was using because I was given drug tests, but he would never ever bring it up” (lines 318-319). Additionally, Savanah said, “They drug test you” (line 419).

**Summary**

On reflection of their experiences during active addiction and the treatment/recovery period, participants described their lives as being out of control and putting their addiction before anything. Descriptions of having a desire to stop their drug use was common. However, they recognized they were not able to achieve recovery on their own. During their time in treatment, they reflected on what life was like during active addiction. They accepted responsibility for their actions and held themselves accountable for the consequences their substance use had created. Stories of the healthcare providers ignoring their substance use were common. The participants also shared stories of how they perceived their care and the health of their unborn babies. The next category discussed will be moods of addiction.

**Category 3: Moods of Addiction**

This category was chosen to demonstrate the participants’ patterned emotional responses to addiction. When the addicted person is faced with stress or grief their natural response is to used substances. They believe using substances will help them forget about their problems. The substances provide them with comfort and make them feel good. The person with addiction admits the problems are not removed by using substances. Instead, their substance use brings about additional problems. They often experience negative feelings towards themselves and others because of their addiction. Alternatively, addiction can lead to feelings of gratitude in the recovery phase. Each of these emotional responses to addiction will be presented in the text that follows.
Subcategory: Responses to Stress and Grief

This subcategory is important to understand the participants’ triggers to use substances. Triggers are unpredictable. SUD can be caused by a very tragic situation or simply as a way to make it through daily life.

Property: Family. This property classifies the participants’ response to using substances that are related to a family situation. All but one of the examples that follow are examples of using substances because a family member used substances. Krys used substances because her husband was using:

My husband at time he was using it, you know. And then, it turned into him offering me to using it, and then you know at that time I could smoke a little bit and then leave alone. You know it didn’t faze me and then it just got to the point where it was a everyday all day thing (lines 115-119).

Louisiana described how sad she was to lose her children. Because she went to jail she has family that is no longer a part of her life:

I went to jail, I lost my kids. And then there are certain family members that I don’t talk to anymore (lines 125-126). It was hard. It’s really hard. A cried all the time for my babies. I just wanted my babies back (lines 142-143).

Savanah struggled with being pregnant and was losing her children to DFS all at the same time. She said she was so down on herself that she gave up, but then she felt her baby moving inside her, which was the determination she needed to get her children back:

Honestly, I know it sounds bad, but my other kids are getting ready to be adopted out. Like, I kind of gave up and I just couldn’t get it together, so I was…… Being pregnant really…… I felt guilty for being pregnant because of my other kids. I was losing my other kids. It was terrible (lines 245-248). My first three it was so easy to quit. I don’t know
why....... I think with my six-year-old it's because I had lost my other kids.... I had thought, I lost them forever, and I just really didn't care. Like my heart was broken. And I know that sounds terrible and I didn't care. And then, once I started feeling him move it changed everything. I fought, and I got all my kids back at that point because I fought so hard (lines 261-265).

Mary shared that she was following the actions of her family. “Family used it too, so it was just a normal thing in my life, I guess” (line 113).

Property: Trauma. Trauma encompasses the participants’ stress response to a tragic situation that triggered their addiction. For example, Kate had never used drugs prior to being raped. She described a very tragic gang rape that left her feeling broken. She used heroin as a way to escape the reality of dealing with the trauma:

It ended up my girlfriend... she was doing heroin before me. And I was not like... I wasn't really into it at the time. But I went to go actually pick some up for her from this guy and he ended up raping me with his two friends. I ended up you know getting raped by three men and they threw the drugs at me. They threw the heroin and then $20 at me and then told me to go on. And I walked home and then I gave it to my girlfriend. I was mess and she asked me did I want to forget about it, forget about the experience that happened and I said yeah, and then that's whenever I shot up heroin the first time and I forgot all about it; that's for sure. And it made me forget about everything I just went through. And that's.... that's what I wanted to do because I just was not about the deal with the pain. So, that's what I did every day to deal with that (lines 96-105).

Sarah has suffered tragic loss in her life that led to her substance use:
It’s just certain life things, life situations that made me use at a young age. I lost my mom at a young age, at 14 (lines 94-95). Me and my husband had suffered losing one of our own children at six weeks old (line 155).

Irina felt the pressure of dealing with a different kind of loss. She found herself without a job and homeless. She had fallen into a deep depression. She turned to her boyfriend for help but his help came with conditions:

I’ve been emotionally so down (lines 126-127). I got moments when I didn’t have jobs. I didn’t have a place to stay. And all the time he’s been there for me, but he’s been there like in this way, if I’m going to help you, you need to do this, or you need to do other things (lines 137-140). I started to have problems because of him smoking. It was hard, he didn’t want to quit. He told me if you don’t smoke with me then I’m going to go smoke with other girls (lines 131-132).

Property: Daily Life. Daily life depicts how the participants have become used to substances being part of their usual routine. The participants explained how the substances they used grew from a casual use to everyday use. For example, Ruby described getting high every day to deal with feelings of being overwhelmed or stressed.

Because back then, if I got stressed or overwhelmed I would just say well let’s get high, and just feel better and then everything will work itself out or whatnot. Just getting numb basically. And now I don’t. So, it’s just so much different (lines 248-250).

Sarah described a life of dealing with triggers to use every day. She explained that many times people do not know how to handle everyday life, so they turn to substances that help them through life.

Well, it’s like a something I deal with every day pretty much. A lot of people say it’s a disease or illness that people have. I kind of consider it like they see it, as a disease. It’s
something that you deal with every day. Every day I have to deal with different triggers
that made me want to use, but I just keep in mind how far I came over the past year and
stuff like that. So, it keeps me from going out and doing what I used to do (lines 88-92). I
don’t know about other people’s issues, sometimes we just don’t know what to do in
life, you know. Life throws you curveballs and stuff. That’s how people escape
sometimes, you know, they don’t know how to deal with the pain and how to deal with
life (lines 102-105).

Savanah said a trigger for her was being alone or around other people who are drinking
alcohol. This is an example of daily living and the struggle to stay sober:

Being by myself when my kids aren’t round makes me want to drink. Because I’m by
myself and I think, why not, and it just continues on. Or if I get sad or really upset, I
don’t like to cry, and that triggers it. And if I’m around people that are drinking that’s
another trigger. Everything’s a trigger for drinking for me (lines 197-200).

Subcategory: Responses to Addiction Challenges

This subcategory further defines the category mood of addiction. The participants were
asked about what had been the greatest challenge caused by their addiction. The participants
described distorted feelings and behaviors that were brought on because of their substance use.

Property: Pessimism. This property is used to describe the participants’ range of
negative emotions such as hopelessness, resentment, ashamed, inadequacy, anxiety,
demoralization, and suicidality. Additionally, participants described challenges they faced as a
result of their addiction. These challenges included pessimistic statements.

Louisiana was holding onto a lot of resentment towards herself: “I hold a lot of
resentment against myself for doing what I did” (lines 367-368). Elaina felt trapped: “I feel
trapped when I used to do it” (line 107). Kate felt ashamed and stopped attending her prenatal
care appointments: “I was heavy, heavy using, and I was so ashamed to go to my prenatal appointments because I was tired of failing the drug test....” (lines 119-120). Mary’s greatest challenge was a feeling of doom and loneliness:

I guess just a feeling of doom (line 153). Honestly, having to say good-bye to getting high. That was really.... it was really hard. I don't know if this even makes any sense to you. I don’t know if you’ve ever use drugs, but getting high and the drugs was like my best friend. It was always there for me when I needed it. It never leaves me. I guess it’s been hard to let go of that and getting out into society (lines 380-383).

Jess described her challenges with addiction as fun in the beginning, but her story quickly changed to a life of destruction:

For me to have an addiction, it means fun. In my addiction I was always on the go and able to get stuff done, and be happy about it. Just overall be happy. I don’t know.... that's what it [addiction] was at first, and then it just became a problem. It [addiction] tears down, it rips apart and destroys everything you ever cared about (lines 92-95).

Nicole gave up on herself: “I feel like I was giving up on myself and I just didn't feel like I was adequate enough” (lines 205-206).

Krys’ challenge was controlling her negative emotions of anger and frustration. She blamed her husband for introducing her to substances. “My husband was the one that got me started using. I just I had so much anger and frustration and wanted to you know blame him for everything” (lines 228-230). Kate had difficulty selecting one challenge of addiction because she believed addiction raises numerous challenges. Kate said addiction challenged her whole life:

Like it comes with a lot of challenges, so I can't just think of one or like the greatest challenge, but it would probably be just knowing.... Knowing who I really was. Honestly, I look back and like my whole world was falling apart, but I was just acting like
everything’s fine (lines 432-433). Like I didn’t understand how far my addiction was and how deep it was and how much it was affecting my life (lines 434-435).

Sarah, Tara, and Jess found staying sober to be their greatest challenge. Sarah and Jess shared that staying sober also meant discontinuing old friendships. Similarly, Nicole described letting go of her friends as a challenge. These challenges were seen as negative emotions because the lifestyle the participants were used to no longer existed. Sarah was challenged by not being able to say hello to past friends.

I would guess the biggest challenge still to this day is just staying strong and making sure I just don't use again. I keep a support system around me. There are certain days I’ll be drive around or something and I’ll see somebody I’d like to stop in and say hi to, but then I'll second guess myself because it might not be good idea. I mean stuff like that I deal with every day (lines 343-346).

Tara found remaining sober a challenge. She also had negative emotions about being a single parent:

My greatest challenge? It [addiction] would probably be, staying sober (line 443). Not only do I have a baby that I’m trying to raise by myself, but I have everything else that was a problem before still seems to be a problem. So, I’m dealing with all of that, and then some. And then trying to be an active citizen and work, and you know, having to deal with everything like I just mentioned, you know it gets to me (lines 447-451).

Jess shared that staying away from substances was a challenge:

Staying away from it [drugs]. (line 509) That’s the biggest challenge. Because I mean, I met a network of people that obviously use it, and the other network that don’t obviously use it. So, my mindset has been staying away from the people that don't obviously use it (lines 513-515).
Nicole explained that it was difficult to eliminate her friends and all the memories they had together:

Cutting off all the reserves, which is people and all the things you affiliated with drugs. That was hard for me. I made a lot of good friends that way. Even though they decided to keep living that life, I couldn't do it (lines 342-344). It’s been challenging because they weren't just the friendships that you make whatever you're getting high and stuff like that. It was friends that I've known since school that we had memories together, we hung out all the time, and then we slowly led to experimenting and then hanging out with each other and doing it full time. So, it's just it all those good memories filled with bad memories and I didn't want to hold on to them (lines 349-353).

Denise explains that her greatest challenge of negative emotions was losing her power and failing her loved ones.

My lack of being in power. Not being a parent to my children. Knowing that they love me and nobody can love them like me. And just running from them. That’s been my biggest failure of being an addict, you know? Just not being able to pull it together for the people that I love (lines 355-358).

The worst stories of pessimism were shared by Kate and Mary. They described extreme pessimistic thoughts that included suicidality. “What triggered it, me having to go to rehab was that I was going to try, I tried to kill myself with fentanyl” (Kate, lines 118-121). “It’s really worrisome I guess. At one point I had a feeling that I didn't want to be alive. (Mary, lines 152-153).

**Property: Negative Behaviors.** This property of negative behaviors describes physical acts of negativity that result in further challenges for the participant. Krys believed her actions
of not smoking marijuana during pregnancy were good but she began using again after her children were born.

After I had my son, I went back to smoking weed and when I was pregnant with my daughter, as soon as I found out, I was pregnant with my daughter, you know, once again I just weaned myself off of it and left it alone, until after I had her. I didn’t want to do no harm to them, so I just left everything…. I didn’t touch it (line s747-752).

Kate was oblivious to her addiction. She failed to see how addiction was impacting her life:

Honestly, I look back and like my whole world was falling apart, but I was just acting like everything’s fine. Like I didn’t understand how far my addiction was and how deep it was and how much it was affecting my life. It was a whole challenge. Being addicted…. Everything is a challenge, really everything is a challenge. It’s not fun (lines 432-437).

Tara thought that she could leave her addiction behind if she moved to a new state:

I was addicted to heroin in Kentucky and I moved to Missouri to kick that habit and I ended up replacing it with methamphetamine. So never was I actually clean, but just…. it was progress, not success (lines 147-149).

Savanah described her addiction to alcohol as an ongoing cycle, a behavior that is unbroken.

I wake up, drinking all day long, I go to sleep, drink, and I wake up drink, and I go back to sleep, wake up drink more……. It’s just… And if I’m around a bunch of people it’s a party. It’s just…… I’m sick as heck from being drunk, and so I drink again. It's just an ongoing cycle and everything makes me want to drink (lines 190-193).

Nicole and Denise described a life of homelessness and negative behaviors to survive:

I went from sleeping on different friends’ couches, wrecking a vehicle a couple of different times. I stole. I lied. I manipulated people for money. It was because I was
addicted to my escaping a reality that I didn’t really have a sense of care towards anything, besides fixing that for myself. It was very selfish of me (lines 105-108).

Denise shared her story of homelessness with her children:

I didn’t get any prenatal care. I was wrong, I was doing wrong. I was homeless at a point with two of them. Literally, with my two-year-old daughter, my water broke sittin on the church steps with my little bag of clothes on my back (lines 291-293).

**Property: Denial.** Denial describes the failure to recognize or acknowledge addiction as reality. Life has become unmanageable and challenging due to the persistent addiction.

Jess described a time during her prenatal care appointment when she was in denial about her addiction. “I never brought it up to anyone. In my mind at that point, I didn’t have an addiction yet” (lines 365-366). Irina was in denial about her addiction during much of the interview. Irina struggled with admitting she had an addiction. “I’m a woman. I don’t use nothing, but sometimes like cigarettes, maybe weed” (line 55). “It’s not the main problem for me. I’m a really very responsible person” (line 277). Peaches explained that it took her a while to realize she had an addiction:

No, I didn't really think of it as a problem at the time. Which, I never had done serious at the time. Like, I had used drugs then and I had gotten sober when I got pregnant, besides pot. And then it wasn't until after I had the kids in this last year that I really got like, dangerously acquainted with hard drug use (lines 254-257).

Participants’ reflective accounts of their feelings and behaviors continued but changed focus when they were asked about positive aspects resulting from their addiction.
**Subcategory: Responses to Gratitude During Recovery**

This subcategory describes the participants’ statements about feeling thankful for their addiction. They describe their positive thoughts and attitudes about addiction, including ways their addiction positively impacted their life. This was an opportunity for positive reflection.

**Property: Connectedness.** This property further describes the participants’ feelings of gratitude for their addiction. The participants shared examples of positive ways their addiction brought them closer to someone special in their life.

Kate, Tara, Elaina, and Shirley were grateful for their stronger family connections. “I would say if anything good came from addiction out of my experience, it would probably be bringing my stepmom and me closer” (Kate, lines 415-416). “Like getting to wake up and see him [her son] smile every day and say, ‘good morning baby.’ That’s the biggest reward ever! And then you know, getting to see my dad” (Tara, lines 469-471). “I actually got closer to a lot of my family members. They can relate to me in a way of what I was going through. It brought a lot of people closer to me” (Elaina, lines 442-443). “Yeah, like my relationships and then my son. Eventually, you know me and my mom were on the straights and then it was just, yep, nope” (Shirley, lines 292-293).

Jess, Mary, and Peaches were grateful for their addiction and the connection they feel they have with others.

“I would not change nor do I don’t regret anything that I have done in the past. It has opened my eyes to another side of life. Now I’m able to feel empathy for people, and I can relate in a lot of other ways that I never could before” (Jess, lines 533-535).

Mary was grateful for her family and better relationships. “My family, I’d say relationships in all aspects, whether it's family, friendships, or my boyfriend they’re all 100 times
better” (lines 203-204). Peaches shared that her new-found humility and compassion towards others:

I’ve learned so much, and it makes me so humble and compassionate towards others that are in my situation. It makes me understand others in a way that I don’t think a lot of the world sees or recognizes. Because now, I can help others because I understand where they’re coming from. I understand that life happens. I have already helped so many people in just the last little while (lines 356-360).

**Property: Contentment.** This property further describes the participants’ feelings of gratitude for their addiction. The participants shared that they were happy with where they are in life at this moment. They were grateful for how their lives are progressing. They expressed that they can see a real change in their thoughts and behaviors while living a life of sobriety.

Krys said her addiction has made her stronger and she had no regrets.

I mean there’s a lot of things, a lot [of] people say they would change, but my addiction, I think, in so many ways, my addiction has made me a lot stronger (lines 152-154). I could have a lot of regrets in life but...... some of them I do, but I don't, because about how a lot of things have happened because like I said earlier, it it's made me who I am (lines 793-795).

Ruby was content with her mindset since becoming sober. “Being sober this long and, probably, you know proud of myself and the steps I’ve taken. And you know, like the mindset of my priorities are so much better” (lines 538-539). D. W. was happy that she realized her addiction at a young age. “I’m glad I figured it out so young versus waiting several years down the road and being older and it being harder to beat” (lines 368-369). Tara was grateful to be clean and have a clear headspace. She said she has never been able to focus on herself until now:
Wonderful! Yeah, it was great! Not only did I get a chance......a timeout just to focus on me and find out who I was really. I hadn't been able to do that because up until my last incarceration I was, you know I had never really been clean (lines 141-143).

Shirley felt contentment with the simple things in life that many people take for granted. “Knowing that I do have a roof over my head, and I do have a job. And just pretty much being happy because I am sober” (lines 389-390). Denise credits her addiction for becoming a wiser individual. She is looking forward to the future:

Because of my addiction, I’m a lot wiser about things (line 364). I think I have a great story to tell and I hope one day it will help somebody. So, yeah, I got a lot of good things out of my addiction. A lot of good insight. I probably wouldn’t appreciate things the way I do now if I didn’t have lost so many things along the way (lines 369-372).

Property: Perseverance. This property describes the internal drive of the participants to not give up. Perseverance demonstrates the power of positivity, which is a necessary quality of gratitude. Participants shared their thoughts of continuing the long road to recovery.

Savanah was grateful for all she has learned. She recognized bumps in the road but she did not let that stop her.

I’ve learned a lot. A lot of good has come out of it, I’m just getting better and better. I just had a little bump in the road this time. But, I finally got my life together you know, you just keep trying, and don't give up (lines 479-481).

Shirley recognized the road to recovery can be slow. She was grateful for her journey and being able to work towards completing her General Equivalency Diploma (GED). “I’ve set a couple [goals], you know a job, place of my own. It takes a little time to get it all up there, but I’m slowly getting it.... And my GED classes” (lines 394-395, 399).
Peaches described that she was putting herself first. She shared that obtaining sobriety for her children was not enough.

I’m doing this for myself, like first and foremost because I have to do it for myself. If I want to be a good mom, a good friend, a good community member, I have to have this for myself first. If I just was in there, like to see my kids, that’s not enough. I’ve seen it so many times before, you have to want it for yourself. So, I would still be sober today, no matter what happened with my kids (lines 192-198).

Summary
The participants described how they used substances to cope with the problems in their lives that have continued. They described a pattern of substance use due to family issues and trauma. Additionally, they explained their substance use as a way to cope with getting through daily life situations. They described the negative thoughts and behaviors they had during active addiction. Lastly, participants described the feelings of gratitude they have for their addiction experience. Several participants shared that they were grateful for the closer connections they now had with others in their life. Additionally, participants were thankful because they believed their addiction resulted in them being better people. The next and final category discussed will be motivating factors.

Category 4: Motivating Factors
This category describes what motivated them to seek and remain in treatment for addiction. Participants described their primary motivations for desiring a life of sobriety.
**Subcategory: Personal Aspirations**

This subcategory describes the participants’ reasons for being serious about seeking addiction treatment. The two primary motivations involved their children and themselves.

**Property: The Children.** This property describes the participants’ primary motivation for seeking addiction treatment. A desire to be clean for their children was the participants’ internal motivation to stop the cycle of addiction and set a positive example for the children. Many of the participants had experienced the removal of their children from the home for safety reasons and subsequently had lost custody. Seven of the 17 participants expressed that regaining custody of their children was the primary motivation for seeking treatment. The children were either in DFS custody or with a family member.

Ruby described the lesson she learned in treatment:

I learned if you're going to keep using drugs you don't get your kids back. And that was a motivator, if you're going to keep trying to skip, you know skip...... but I can't say the word right now. You know give up, get by on using and halfway following the rules, then you don't get your kids back. And I said that's not for me. I don't want to halfway do this, I want to all the way (lines 187-191).

Louisiana realized she was not going to be happy until her children were back in her custody. “I wanted my kids back and I wasn't going to be happy. I was happy with my husband, but I wasn't going to be completely happy until I got my kids back” (lines 237-238). Kate explained that this time in treatment was different because she knew her daughter was counting on her. She had a desire to remain in treatment to regain custody of her daughter.

This last time it's been successful because I have my daughter now (line 209). But this time, the only reason that it has been so successful, and like, I really plan on graduating
from this program and it's actually helping me now is because my daughter is counting on me. That's my motivating factor. I've got to get her back (lines 213-215).

When Elaina was asked what motivated her to seek treatment, she said, "The day my kids got escorted out of my house by somebody that wasn't their mother" (line 223). Mary’s motivation for staying sober was a desire to watch one of her children grow up. Mary’s first four children had been adopted from foster care.

I’ve been clean for 10 months now, and I’d say my motivation is, I have a chance to get my daughter back and actually be a mother. I have five kids and I haven't got to watch none of them grow up. So, that would be my motivators to get my daughter back and have a good life (lines 191-193).

Denise shared her experience of having posttraumatic stress disorder (PTSD) because her child had been removed from her custody.

The last time is the time I went through treatment and got my life together. I didn’t want to lose another baby. It was very horrific having my other one taken out of my arms. When I found out I was pregnant with my last child I just made a conscious decision I wasn’t going to allow for that to happen again. But, you know life was great because I had a plan. I feel like at this time in my life I was ready to execute it. It wasn’t anymore a thought, you know, it was a plan. It was something I wanted. It wasn’t anything that was required by the law or nothing like that (lines 162-168). I still have PTSD horribly over that. It's hard for me to let Mia go places and be places without me there. Even though I know I’m doing right now, it is just that fear of somebody taking her away (lines 295-297).

Peaches described missing her children as her motivation for staying in treatment:
Missing my kids. I mean, thank goodness they didn’t go to state custody or anything. They went to their dad. For that, it was hard, it was like the most dramatic thing. It’s honestly, what led me to such a heavy addiction (lines 335-337).

Four participants shared that their primary motivation of sobriety is their children. Sue, Krys, Nicole, and Tara’s primary motivation for seeking treatment was to do it for their children. Sue said, “My children (line 216). I want to be clean for them” (line 220). Being able to be there mentally and physically. Not just there, but in there” (lines 502-503). Krys shared that her motivation was her children and escaping a life of abuse:

My kids for sure, and just tired of living the life I was in, and it was also a way for me to better my life, and get me out of the situation, not only me, but get my kids out of the situation that we were living in, as far as me being abused and my kids being abused and, you know I told everybody I hate, I hate that it happened like it did, but in the same time I thank God just about every day that it did wind up going down like it did, because it did help me and it opened my eyes a lot (lines 183-190).

Nicole’s motivation for seeking treatment was her unborn baby. Her first child had been placed for adoption. “The fact that I’m pregnant again and that was one of my downfalls to relapsing my last time. I did a major one” (lines 195-196). Tara had a desire for her son to have the best life possible:

Hands down, my son. You know, it’s just not about me anymore. You know? And to make sure that my son has the best life possible. I know, that I have to be clean and sober because there's not....... there’s no in-between there! There's no, I can be a functioning drug addict and make his life the best to my ability. That's not; that's not a thing. You know, it maybe for some people, but not for me (lines 208-212).
One participant shared her desire to be clean for her children and regain custody. Savanah suffered from watching her son battle addiction. She was unable to help him in his addiction because she too was addicted:

But, my motivating factor was watching my son go through addiction, and not being able to help him, because I was also using. That was my hardest point in my life, was watching him suffer like that, separate like that (lines 305-307). And that was my motivation to get my kids back (lines 349-350).

**Property: Freedom from Drugs.** This property describes the participants’ motivation to have a better quality of life for themselves. Expressions of wanting to focus on self were common among the participants. Other expressions of motivation included a readiness to stop using substances because they were tired of the lifestyle and lies that had been a part of their lives. The participants had a desire to be honest for themselves and their loved ones.

Six of the 17 participants shared a motivation of being free from substances because they wanted it for themselves. Sue said, “[I] want a better life for myself” (line 132). D. W. had suffered a childhood of abuse and was motivated to work on healing herself:

The place that I’m going to it’s not just about the drugs. It’s about the trauma and stuff like that was motivating. (lines 156-158). I wanted it myself, to do it for myself too so I could be a better mom and a better friend. Just a better person in general (lines 243-244).

Sarah said she felt like she was chasing a ghost. The phrase “chasing a ghost” is interpreted as Sarah thinking the drugs were leading her down the path of a happier and easier life. She believed that her drug use was the key to happiness and the answer to her problems. She was motivated to have a better life for herself and her children:
I just wanted a better life or my kids or myself. My life had just gotten to the point where I just.... I mean, I don't know, looking back now if getting high was ever enjoyable. Yeah, I guess it was because otherwise I wouldn't have done it. But, I got to a point out there, towards the end that it wasn't fine, it didn't do anything for me anymore. It was more like chasing a ghost than anything else you know (lines 220-224).

Tara’s primary motivation was being sober for her son. She was motivated and wanted a sober life for herself. However, she struggled with feeling selfish for including herself as a reason for wanting a life free of drugs:

I don't want to be stingy but you know that my help and my future depends and relies on me at the end of the day. I mean, of course, you know I have support everywhere, but it doesn't matter if I don't do it for me. Then I really can't do it for anybody else either (lines 227-230).

Jess explained her motivation for sobriety was herself. She also had a desire to recognize when others around her are using. “Just myself. If I’m not okay then nobody else around me is going to be okay. My biggest thing with treatment this time was being able to recognize those around me using” (lines 246-247).

Peaches described her motivation as twofold. She had a desire to become happy and to help others. She suffered through the devastating loss of a close friend who took his own life. Peaches blamed his suicide on drugs.

I was so unhappy. I hit the road and the further away from home I got, the more I just was, just so sad. A friend of mine who died, who also was traveling, he never went back home to see his kid. He killed himself, and I was just like, I know that that's the reason why he killed himself (lines 188-191).

Shirley and Denise said they were tired and ready for their life of drug use to be over.
Shirley said she was happier and healthier without the drugs.

Just to get this finally over with (line 271). Like I tell my counselor every time I go, I’ve been clean for so long, you know. Last time I was in jail I made my mind up then that I didn’t want it, since then I don’t have any cravings. I don’t have any triggers. I don’t want it (lines 275-278). I just got tired of doing it, and my life that I did have. You know, I’m so much happier and healthier. I just don’t want it. That’s just it (lines 282-283).

Denise said her motivation for stopping the drugs was she was simply tired:

Just tired you know, you done get to a point where you’d played every game, did every trick, did every hustle, I’d seen everything. You know, I’ve probably seen things most everyone will never see in their life. You know, my time is up for that world (lines 219-221).

Property: Confidence. This property represents participants’ motivations for seeking and remaining in treatment for their addiction. Three participants described a desire to feel better about themselves and get back to who they used to be.

Kate described a motivation to have more confidence in herself and to stop the self-doubt:

I just want to get myself back. I want to really feel genuinely happy for once. I want to be confident in myself and stop doubting myself so much because in my addiction I never knew if my thoughts were because of the drugs or if it was really you know…. something was wrong with me it was either drugs, or it was drugs (lines 223-226).

Nicole explained that she was happy with her life as it is right now. Living a life of sobriety was motivating her to continue with treatment.

Well, now I’m better on my feet. I’m living by myself for the first time in almost six years. I have a vehicle. I’m living more stress free than I ever had in my entire life. I like
it, and I don't want to lose it. So, it's definitely motivating me to stay on the track I’m on (lines 214-216). The fact that I get to I get a chance to learn how to be a mom (line 381).

Irina reminisced about what her life used to be like. Her motivation for sobriety was to reclaim her previous life:

When I look in the mirror when I was alone, not in a relationship. And when I look at pictures, I say, I like myself in those days (lines 223-224). I want to be like I was before, I want to be happy. I want to look good. I want my baby to see me really happy. (lines 228-229). I like, firstly to work on myself. If I don’t work on myself and if I not better, I feel like I am a nobody to even advice to somebody else or to give examples from my experience. That’s how I feel I need to work on myself first. Then if I can, to help other people (lines 437-440).

Peaches explained her motivation to be sober and help others:

Just that drive to want to help others is also a big motivating factor and what led me to wanting to stay in recovery. Because I’m really good at helping people. It's always been there, it's always been a thing, and so I can't do that unless I’m sober (lines 203-206).

**Subcategory: Support Systems**

This subcategory describes the person or group identified as being the most reliable in their life. The participants believed these people will help them with every life situation. Support can be received from a variety of individuals and places. Additionally, support can be practical and/or emotional.

**Property: Groups.** This property describes the supportive persons within a group setting that lend support to an individual seeking treatment for addiction. For this research, groups are identified as the entire group of people attending a group session focused on the treatment of addiction.
Four of the 17 participants found support from members of the group within their treatment facility. Krys was very grateful for the relationships she developed while attending drug court:

I have the whole program, the whole drug court. Any of the people I’ve met through drug court has been a huge, a huge part in my life. I’m thankful for every one of them. They’ve been with me being graduated from drug court. I still talk to quite a few of them on a daily basis. You know, so yeah, I’ve built quite you know, quite a few relationships with people from actually being able to get the second chance to life and run with it (lines 384-391).

Ruby felt comfort in knowing there were other people like her in the group. “I was nervous, but once I got there I learned there's so many people in there just like me. And then I learned to adapt. It’s good to have a choice” (lines 287-289). Sarah shared that she was grateful for the friends she made while attending treatment:

I didn't know what to expect from any of the other girls and everything. But it turned out to be great. I still talk to a couple of them I was in treatment with (lines 190-192). I do have a few friends are close to me that I talked to a lot (lines 257-258).

Nicole was living in a shelter for pregnant women with SUD. She said the shelter has been her greatest support system. “I would have to say it's the maternity home that I’m incorporated with right now” (line 318).

**Property: Counseling Staff.** This property is an additional layer of a support system. The participants were thankful for the help and support they had received from the counseling staff at the treatment facility where they attended.

Krys said the staff are supportive and helpful resources for her recovery. She credited the counseling staff for helping her obtain the resources she needs:
It's a really big support program. And, it's not just because they help you get clean. I mean there's a lot of, resources and programs that you can benefit from. They have their counseling, therapist, they help you with a lot of stuff. Like Miss Jan and them, if there's stuff we need and don't have, can't get, if they've got the funds to do it, then they help us out. I mean it's a little bit everything (lines 341-347).

Mary described how the staff helps to keep her honest:

I came to the treatment program and they kept me honest. I was nervous at first, but they are real inviting and really, they were here to help me. I mean, I knew, none of them before and they did help me, you know. They did help me a lot (lines 263-265).

Elaina was grateful for the support of her counselor, who provided transportation to her appointments:

It’d be my counselor. He’s the best one right now that supports me more than anything (line 252). My counselor is so amazing. He takes the time during his work schedule and picks me up for every single appointment, and I’ve never missed one (lines 278-279).

Peaches credited everyone in the recovery field as her greatest support system: “My support system in the recovery field has been like the most helpful. Because they just understand and they're trained professionals” (lines 313-314).

**Property: Family.** This property describes the people in the participants’ lives who support them. Having a network of support from family is important for the individual in recovery. For this research, the term *family* encompasses anyone mentioned by the participant as family. One participant was living with a married couple who are friends, but she considered them family.

Ruby said her family was her support system. She had a strong desire to not disappoint them:
My family. My family’s in Tennessee, but I don’t...... just to make them proud. And not keep hiding behind, you know, an addiction or whatnot or pretend for them (lines 306-307). I didn’t want to disappoint them. They said no, you need to do this for you and for your kids (lines 443-444).

Louisiana’s support system included her husband’s parents. “My mother-in-law, my father-in-law” (line 431). D. W. said her support system was “the people that I’m living with” (line 309). Kate shared that her stepmother was her only source of support. “My stepmom is pretty much the only support that I have really” (lines 372-373). When Sarah was asked to name her greatest support system, she mentioned her family and close family friend:

It’s my kids. They are a good source of support to me, they’re a reminder every day to keep moving forward (lines 256-257). Tara has a solid family support system of her father and friends. My father is a great big part of the support system that I have (line 235). Our landlord actually is a big part of my support system. He’s really close with my dad and me. And had it not been for him I don’t know where I’d be today. He actually took me off the streets and give me a place to live (lines 237-239). I have a couple of clean and sober friends that really play a big role in my life. You know, they’re here for me when I fall, and when I get back up. They’re just.... they’re still right here for me (lines 243-245).

Elaina said her strongest support system was her family, especially her adopted mom. “I’d have to say some of my family too. I don’t know what I would do without their support. Especially, my mom. My adoptive mom” (lines 253-254). Jess said her husband was her support system: “my husband” (line 461). Shirley said her support system was “my mom, and my boyfriend” (line 302). Nicole said “my cousin” (line 319). Lastly, Denise said her family was very
supportive of her. “My family, they support me wholeheartedly. They’re so very proud of me. They are my motivators in life. We constantly check in with each other” (lines 321-322).

**Subcategory: Organizational Systems**

This subcategory includes the government agencies that may motivate the addicted person to seek or remain in treatment for addiction. Participants described their involvement with the legal system and child protective services.

**Property: Justice System.** The justice system is an organizational system that can motivate a person with an addiction to stop using substances. Many women with addiction are incarcerated for charges related to SUD.

Six of the 17 participants shared their stories about the justice system. The participants’ experiences with the justice system ranged from one time to seven times in jail. Two participants said being incarcerated motivated them to stop using substances. Louisiana said, “Honestly, it didn't really do no good to go to jail, because when I got out, I got high again” (lines 133-134). Tara shared that incarceration has never worked for her until this last time in jail:

But this last treatment, it really.... really it couldn't have come at a better time you know? Because in the beginning, honestly, I wasn't planning on keeping my baby. Just didn't feel like I was ready. I wasn't honestly ready to stop using. I wasn't financially stable. I wasn't, you know, any of these things. I really didn't think that me and my boyfriend was going to, you know, work out, but I ended up, you know, getting that 120 and changing my mind there right at the end. And you know, I really, I thank God for that, because I can't imagine life without him (lines 150-155). I’ve been incarcerated quite a few times. I did 14 months in county in Kentucky. And then you know, a bunch of overnighters. I’ve been booked and released, and booked and released overnight, 24-hour hold, 12-hour hold. Just for, you know, something small, domestic or an AI [Alcohol
Intoxication], or nothing seriously here, up until this 120 that I just did. But you know,
I’ve been incarcerated quite a few times (lines 164-68).

Mary, who was 25 years old, was incarcerated in high school:
I was on juvenile probation and my probation officer came to the school and gave me a
drug test, and I was dirty for meth and marijuana. So, she sent me to the drug program
for inpatient (lines 168-170).

When Shirley was asked about incarceration, she said, “This was just like my fourth
time” (line 153). Irina explained that being in jail destroyed her. She could not believe it had
happened to her. The justice system had been motivating for Irina to seek treatment for
addiction.
I’ve been not in prison, but in jail for 10 days. And this destroyed me! (lines 158-159).
Being unable to control my emotions and finally I was 10 days. 10 days in jail. I just
cannot believe…….. Still cannot believe that that happened to me (lines 198-199).

Denise had been in prison seven times. She found that life on the inside was easier than
the real world:
I’ve been to prison seven times. I only have three felonies, but I’ve been to prison due to
my addiction. Probation and parole just was never for me. I’ve never been one of those
people that would really conform to rules. When I’m in an institution I’m fine. It’s the
real world I’ve always had a problem with (lines 168-171).

**Property: Drug Court.** Drug court is an organizational system designed to motivate
people with addiction by ordering them into treatment. Four of the participants shared their
stories about drug court. Two said drug court motivated them to stop using substances but the
other two said it did not work for them. Similar to the justice system, there is much debate
about whether forcing a person into treatment works.
Krys had a positive experience with drug court. She enjoyed the program and made several good friends:

I still talk to my counselor from drug court. You build relationships with some of them. And it's still a good support, even though I don't feel I, personally, I don't feel I need the support team anymore, but I still use my support system, because it makes me feel a lot better knowing that I did build a relationship like this with some of these people when it took me so long to actually build that relationship (lines 534-538).

Ruby was motivated by drug court because completing the program meant she would regain custody of her children. “When you go through drug court, you go through certain.... you gotta, you know, go through the program. And, as you do better, you can see your kids more, and that was my motivator” (lines 183-185). Mary had been through drug court three times. “The first three times I went to treatment, they were not willingly. I got sent there by the PO, or the prison treatment by the judge. This is my only time I’m being clean willingly” (lines 189-191).

Peaches enjoyed drug court, although, she began using drugs again:

It was the decision of the Courts. I had gotten a charge and I had been made to go, but I was very... like, very much for my freedom. So, I was willing to do anything. I enjoyed treatment then because, I was sober, my life came together, I was able to pay my bills, and do all the things that I needed for a successful life. That year was great! I loved that year when I was on drug court. It was amazing! But as soon as it was over, I was quickly back on drugs” (lines 163-167).

**Property: DFS.** Involvement with DFS was a strong motivator for seeking and remaining in treatment for the participants in this research. The testimonies of the participants demonstrated just how motivated they were to stop using substances when DFS removed their children from the homes.
Krys said it was scary having her children removed without warning.

It's really scary when you've, especially going from having your kids from the time you've had them to just not knowing where they're at, who they are with, no phone calls no nothing. Like I didn't even get to tell my kids bye. The day they come in, I didn't know they were gettin taken. So, yeah it was, it was, it was really rough. I wouldn't wish that on anybody (lines 234-240).

Ruby shared that she experienced DFS removing her son two times. She never wanted to experience DFS involvement again. DFS is what motivated her to stop using substances.

I felt like a functioning addict and I probably wouldn't ever quit if DFS didn't come in between us (lines 16-167). Not seeing them for a month, that's what really did it for me. Not talking to them or seein them or nothing....... (lines 196-197). I just don't, I don't want to do that again. And besides the fact my son's been taken twice. And I've dealt with DFS twice, so I know the third time they get him, I won't get him back at all. I don't want that (lines 299-301).

D. W. failed to see her part in DFS being involved in her life:

DFS can ruin your life, especially when it comes to you know that, with the drugs. I mean, it will ruin your life (lines 266-267). This pregnancy was completely unplanned and that's another motivator was the unplanned pregnancy, which, it was also [when] DFS got involved and everything else (lines 167-169). I feel fortunate because I chose that and there are still women that are still choosing to do, drugs, while they're pregnant and stuff like that. And just remind them like, it's not worth it. It's not worth losing your kids (lines 268-270).

Kate said her motivation was to get her daughter back. Her daughter was removed by DFS and placed with Kate’s mother:
I’ve got to get her back. She’s in temporary guardianship right now with my stepmom. I still have rights to her, but I am not allowed under the same roof as her right now. Because the DFS case is open. So that’s my motivating factor, is to get back to her and be reunited with her, not just for temporary. I want to be the best mom I can be, and I cannot be a full-time mom and also be an addict (lines 214-219).

Sarah said her biggest motivation was regaining custody of her children from DFS:

My 13-year-old now, and my five-year-old were removed from both of our custody in 2019. So, that was my biggest motivation. It took me over 10 months to actually start getting myself into the rehab and everything, and getting everything right. Because I knew, if I can’t get my stuff together, I would lose my kids (lines 204-207).

Tara’s son was positive for drugs at birth and was placed in DFS custody. Tara believed DFS forced her to sign away her parental rights:

He failed a drug test and I failed a drug test, and they come in two days after I had him, and they took him (lines 322-323). I fought like a dog to get him back for two years. Finally, they told me that if I didn’t sign my rights away that they have rights to any other children that I ever had in the future. I was just...... I ended up signing my rights away, but not because I wanted to, but because of like...... she showed up on Saturday at my house trying to get me to sign my rights away, and it was just...... I feel like they never intended on giving me my son back. Honestly, I did everything they wanted me to do and it still was never enough (lines 340-345).

Savannah had previous involvement with DFS:

When I had him someone made a hotline on me. So, they did the meconium testing; it was negative. But they still took him because my [rights to my] kids were going to be
terminated. They were fixing to be adopted out so, they take your baby when that happens (lines 396-398).

Elaina was motivated to remain sober in order to get her children back from DFS. “I’m fixing to get them back. I’ve been almost close to a year clean. I’ve done everything I was supposed to do” (lines 112-113). Jess was motivated and angered by DFS:

Trying to make children's division happy, because they're just stupid (lines 269-270).

Neither one of my kids are with me right now because of DFS (line 282). I've been involved with DFS for three years. Three years now (line 292).

Mary described her prolonged involvement with DFS. Mary’s four oldest children were removed by DFS and placed for adoption. She was motivated to regain custody of her fifth child:

The first couple of times they come in and took my kids I was able to get them right back. And this last time, I guess it’s been four years now that they’ve been taken and I haven’t heard nothin. It’s very heartbreaking. My attorney that I have now, to help me get my daughter back told me that taking someone’s child is next to capital punishment. Because they’re out there just ripping your life away from you. I write my kids letters, the ones that I don’t get to see or talk to every day. To try and express to them that I’m sorry and um, it’s just very heartbreaking. It’s something that you don’t ever get over. Maybe it gets a little easier but you don’t ever get over it. That’s losing your kids to the system. But like now with my daughter, I have hope, because I’m clean and doing everything they want me to do. They have all these hoops they want you to jump through. It’s still heartbreaking but, you have a peace of mind that she's gonna come home (lines 364-375).

Denise shared that she had one daughter in DFS custody. Her other children had been placed with her mother:
My children. My last one I was pregnant with, her, but most definitely my two-year-old. I just want to point out that I haven’t lost any of my children. My mom has guardianship of my kids, but I’ve never lost custody of them. My plan is to take it, step by step, I had me a plan now. I’m getting Lily, and then every year I’m going to get another child when I’ve proved myself, because I don't want to uproot them and then I’m not ready to take on that responsibility. Yeah, I would say mainly my daughter, Lily. Because even to this day I have issues with anxiety over her, because she's the only one that's not with family, so that makes it really hard (lines 204-211).

Summary

A majority of the participants expressed that their children were their primary motivation for seeking and remaining in treatment. Many of the participants had experiences with their children being removed from the home by DFS. This encounter was found to be the strongest motivating factor for seeking and remaining in treatment. They wanted their children back.

Few participants found their experience with drug court to be successful. Additionally, they were tired of living their lives with addiction. Several participants found that their greatest support system came from their families and the counseling staff at the treatment facility they attended. Participants did not share information about the support received from public support resources such as AA or NA.

Summary

The four major categories presented- the onset of use, dynamics of addiction, moods of addiction, and motivating factors- comprehensively address the two research questions. The next chapter provides a discussion of the findings from this study. The findings will then be compared to the literature and SDT. A presentation of how the subcategories relate to one
another will be illustrated and described. Limitations and implications are presented in chapter 5.
CHAPTER 5: DISCUSSION

Introduction

Addiction is a complex phenomenon that is difficult for healthcare providers to fully understand. This research study aimed to give voice to rural pregnant women with SUD because they are an understudied vulnerable population with poor pregnancy outcomes. Using grounded theory methods for data analysis, this study found that rural pregnant women with SUD often feel alone (moods of addiction). The dynamics of addiction and motivating factors, as categories, demonstrate that rural pregnant women with addiction have a strong desire to stop using substances, but the addiction is too strong to quit alone. They rely on support from trusted healthcare professionals in the field of addiction treatment. When rural pregnant women with SUD are engaged in recovery, they exhibit a desire to regain their health, fulfill roles as mothers, restore family functioning, and live manageable, meaningful, and satisfying lives. Understanding rural pregnant women’s addiction experiences is necessary for advancing healthcare and addiction treatment services.

This chapter reviews the findings of the study on rural women’s experiences with SUD during pregnancy. The research questions, methods, and procedures are briefly summarized. Additionally, this chapter discusses how the categories of onset of use, dynamics of addiction, moods of addiction, and motivating factors inform one another.

The findings are then compared to the literature. The relationships between the subcategories are presented (see Figure 4). SDT was reviewed against the findings. Conclusions were made about a lack of intrinsic motivation and personal autonomy during active addiction. Ultimately, participants demonstrated improvements in motivation to strive for personal best when they were actively engaged in treatment. Five study limitations are discussed: participants from a single state, racial diversity, drug of choice, number of living children, and mental health.
information. Finally, the study implications are presented including ideas for future research, practice, and policy.

Research Questions, Methods, and Procedures Summary

The research questions were:

1. How do rural women describe their experiences with SUD during pregnancy and postpartum?

2. What are their motivations to seek and remain in treatment?

Data collection methods include semi-structured interviews of 17 participants from various treatment facilities and one maternity shelter within rural Missouri. Data analysis included grounded theory methods of the interview data.

Discussion of Key Findings

The research questions focused on rural women’s experiences with SUD and their motivation for seeking and remaining in treatment during pregnancy. As described in Chapter 4, four primary categories were discovered from the interview data: onset of use, dynamics of addiction, moods of addiction, and motivating factors. The findings suggest that the onset of use sets the stage for the development of a continuum of life-long effects related to substance use. A majority of the participants began using substances during their teenage years. Coincidentally, data confirmed they began using substances as a way to cope with a tragic life-changing event (see Figure 4).

The dynamics of addiction elicited stories from the participants that were very similar in the ways they described their life with addiction. Several of the participants used nearly identical language to describe the characteristics of their life during active addiction. The sense of losing control was a strong commonality among the participants. The participants’ time in addiction treatment was a time of reflection. Accountability for their actions brought about
deep insights into their past and future. Surprisingly, the findings suggest that there is a sense of disengagement from healthcare providers. These findings are surprising because healthcare providers are expected to be engaged, trusted, excellent professionals. When their behavior is detached from the patient, the interaction perpetuates the negative views of self and loss of control that women with addiction may experience (see Figure 4). The participants shared several insightful suggestions for ways healthcare providers can improve the addiction treatment process. These suggestions are presented in the implications section of Chapter 5.

The moods of addiction from the participants were negative during active addiction and positive during recovery. The findings suggest that a person with an addiction has low self-esteem and self-worth. They also have feelings of disconnection from others. Consequently, they fail to see their substance use as a problem. Ultimately, they have a difficult time visualizing a life of value and purpose. Findings revealed that a value-driven, purposeful life is achieved when the addicted person engages in recovery within a support system.

The findings also suggest that time spent in addiction treatment and recovery leads to perceptions of gratitude. During recovery, they begin to restore connections with others. They no longer feel alone in their addiction. Through reflection while in recovery, they develop contentment with their life. They develop perseverance to achieve lifelong sobriety (see Figure 4).

The motivating factors identified by the participants elicited an overwhelming response of concern for their children. All of the participants except one had living children. Of the participants with living children, the findings suggest that removal of the children from the home by DFS was the strongest motivating factor for the participants to end their substance use. The findings suggest that the second greatest motivating factor was their desire to stop
using substances and focus on themselves. Additionally, findings suggest that a support system had a positive impact on the participants’ recovery (see Figure 4).

The next section of this chapter compares the category findings to the literature. The research study findings for each category will be summarized. Then a presentation of the subcategory relationships will be discussed. The conceptual model found in figure 4 demonstrates the four categories and their corresponding subcategories.
Figure 4

*Conceptual Model of Four Major Categories and Corresponding Subcategories*

- **Onset of Use**
  - Getting Started
  - Developmental Maturity

- **Dynamics of Addiction**
  - Loss of Control
  - View of Self During Addiction Treatment
  - Encounter with Provider Disengagement

- **Moods of Addiction**
  - Responses to Stress & Grief
  - Responses to Addiction Challenges
  - Responses to Gratitude During Recovery

- **Motivating Factors**
  - Personal Aspirations
  - Support Systems
  - Organizational Systems
Comparison to Literature

Category 1: Onset of Use

The onset of use refers to the period when the participant first began using substances. The mean age was 16.6 years and the median age was 16.5 years for the onset of use. The time between the onset of use to the realization that SUD had become an issue had a mean duration of 4.8 years and a median duration of 9 years.

The literature on age and the onset of substance use is limited (Millar et al., 2021). However, Millar et al. (2021) studied the relationship between the age of first substance use and the first use of alcohol, tobacco, and cannabis and cannabis use patterns. Those with past cannabis use along with the use of alcohol and tobacco were more likely to report continued, heavy, and problematic cannabis use (Millar et al., 2021). Twelve of the 17 participants in this study of rural pregnant women with SUD reported using marijuana (cannabis) when they first began using substances. Participants in this study who began abusing marijuana reported continued, heavy, and problematic substance use and transitioned to other substances such as MA. Participants in the Millar et al. (2021) study continued to abuse marijuana, but a shift to other substances was not discussed. According to Harding et al. (2022), opioids and MA are often used together. However, MA was the most common drug of choice named among the study participants, and it was not used in conjunction with other substances. Recently, the opioid crisis has received most of the attention among researchers and mental health providers (Paulus & Stewart, 2020). Although, MA use among rural pregnant women continues to be a growing problem (Grant et al., 2007; Harding et al., 2022; Maya-Enero et al., 2018; Zang et al., 2021). Concerns regarding the readily available ingredients for manufacturing MA and its simplistic forms (ice, powder, and pills; NIDA, 2019; Paulus & Stewart, 2020), coupled with the lack of treatment available could be reasons for the growing problem.
SUD is a progressive disease defined as the use of illicit substances and/or misuse of legal substances, characterized by compulsive, risky, and self-destructive behavior that eventually results in social impairment (APA, 2013; Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013). The participants’ explanation of their SUD is congruent with the description of a progressive disease that includes the use of illegal substances, misuse of legal substances, and compulsive, risky, and self-destructive behavior. Data collected from the 17 participants in this study described how their SUD ultimately resulted in social impairment.

**Relationships among the subcategories for the onset of use**

The subcategory of getting started is suggestive of a relationship to the subcategory responses to stress and grief (moods of addiction; see Figure 5). Participants shared their stories of stress and grief. They described how their substance use either began, continued, or increased as a result of life situations related to stress and grief. These findings are congruent with the literature that SUD during pregnancy is often driven by various social determinants of health factors including poverty, history of abuse, trauma, intimate partner violence, mental health concerns, homelessness, and maternal-child separation (Hubberstey et al., 2019; Preis et al., 2020; Shahram et al., 2017; Shaw et al., 2015). This continued use began to develop into patterns of substance use.

The subcategory of developmental maturity has a relationship with the subcategories loss of control (dynamics of addiction) and organizational systems (motivating factors; see Figure 5). The mean period of 4.8 years represents the progression of their disease from onset of use to the realization that their addiction was an issue. Findings suggest that they did not recognize how unmanageable their life had become for nearly five years; in that period, they lived a life that was controlled by their substance use. The participants described their life during active addiction as out of control. Their SUD resulted in incidences with the
organizational systems (motivating factors). Some participants reported being incarcerated several times and being ordered into drug court during the early stages of their addiction. None of the participants remained sober after their time in jail/prison. This finding is congruent with the literature. There is no benefit in charging these women with crimes (Holsapple & Jensen, 2014; O’Connor, 2019; Stone, 2015). Legal punishment discourages rural pregnant women with SUD from seeking healthcare and treatment for addiction (Holsapple & Jensen, 2014; O’Connor, 2019; Stone, 2015).

Participants had encounters with DFS removing their children from the home. Run-ins with the legal system are a consequence of their out-of-control life. These findings are consistent with the literature showing that maternal consequences of SUD are associated with relapses, and high-risk behaviors such as intravenous drug use, prostitution, and other criminal behaviors (Krans & Patrick, 2016). Adverse cognitive effects associated with MA use may explain some of the participants’ impulsive decision-making and inhibitory control (Perez et al., 2021).
Figure 5

*Relationships Identified for Subcategories Within Category 1: Onset of Use*

**Onset of Use**
- Getting Started
- Developmental Maturity

**Dynamics of Addiction**
- Loss of Control
- View of Self During Addiction Treatment
- Encounter with Provider Disengagement

**Moods of Addiction**
- Responses to Stress & Grief
- Responses to Addiction Challenges
- Responses to Gratitude During Recovery

**Motivating Factors**
- Personal Aspirations
- Support Systems
- Organizational Systems

**Relationships Identified:**
**The onset of use:**
- **Getting Started**
  - Response to Stress & Grief
- **Developmental Maturity**
  - Loss of Control
  - Responses to Stress & Grief
  - Organizational Systems
Category 2: Dynamics of Addiction

The category of dynamics of addiction describes the participants’ life during active addiction, including their idea of what addiction means to them. Descriptions of their experiences with healthcare providers are included in this category because attending prenatal care appointments is part of their pregnancy experience during active addiction. These findings were consistent with the literature. Family and friends are aware of their loss of control behavior by observations such as disregard for work, family, play, and even basic self-care (Foddy, 2010; Hatterer, 1982; Sussman & Sussman, 2011). The participants described their life during addiction as being out of control. They were not able to stop using substances even though they had a desire to quit. Additionally, the findings described experiences of placing addiction as the priority over everything else in their life.

The participants described their compulsive choices during active addiction as placing the addiction before everything in life. The addiction becomes the priority. These choices are in alignment with Foddy’s (2010) four distinct behaviors: insensitivity to the cost of the substances used, regret, strong uncontrollable desires, and compulsive behaviors. Krys’ response captures these four distinct behaviors exactly:

You put your addiction before everything. It doesn’t matter what it is, if you want to get high you’re gonna put it before your kids, you're gonna put it before your family, you’re gonna put it before your responsibilities in your house, like cleaning, even taking care of your animals, like you put everything second, you're going to put it before you're.......yeah, so that comes first (lines 91-97).

The findings are not congruent with the literature regarding the participants’ perception of stigma and judgment from others. According to the literature, pregnant women with SUD encounter serious stigma and judgment from their healthcare providers, families, and
communities (Kramlich et al., 2018). These women are faced with specific feelings of guilt, shame, and embarrassment (Jumah, 2016; Kramlich et al., 2018; Kozhimannil et al., 2019). The participants in this research study did not express concerns of stigma and judgment from others in the community or their healthcare providers. When they were asked to describe experiences with poor treatment from others in their communities, most said they never had poor experiences.

Findings revealed a lack of conversation among the participants and their healthcare providers. The participants expressed concerns over losing their children if they admitted to using substances. This finding is similar to what is found in the literature. In one qualitative research study (Stone, 2015), 22 of the 30 participants reported being afraid they would be identified as using substances during their prenatal visits, voiced fear of losing custody of their newborns and/or their children, and feared they would have to face the criminal justice system.

Participants shared that their healthcare providers did not ask them about substance use. These findings could be a result of the healthcare providers’ lack of confidence towards engaging in this type of conversation. Rural healthcare providers may not feel adequately prepared to have serious conversations about addiction with pregnant women. These providers require enhanced education and understanding about perinatal addiction treatment (Kramlich et al., 2018). Many healthcare providers admit to having a lack of knowledge regarding SUD, screening instruments available, and how to properly use the screening instruments (Logan et al., 2003; Meyer & Phillips, 2015; Ondersma et al., 2019). The participants in this study did not mention being asked to complete any screening instruments.

**Relationships among the subcategories for dynamics of addiction**

The subcategory of loss of control has a bidirectional relationship with the subcategory of responses to addiction challenges (Moods of Addiction). This means the two subcategories
(loss of control and responses to addiction challenges) have a bidirectional relationship with each other. Additionally, the subcategory of loss of control has a unidirectional relationship with organizational systems (Motivating Factors; see Figure 6) meaning the relationship among these two subcategories moves in a single direction. Loss of control behaviors include disregard for work, family, play, and even basic self-care (Foddy, 2010; Hatterer, 1982; Sussman & Sussman, 2011). In this research study, the loss of control properties includes setting priorities, compulsiveness, and inability to stop using substances. Pregnant women with addiction continue to be a public health concern with complex health care needs that cannot be met within the legal system. Without adequate knowledge about the disease of addiction, pregnant women will continue to face incarceration caused by their disease. They will not receive the necessary healthcare needed to care for themselves and their unborn baby.

Participants’ sense of powerlessness and their inability to determine an order of importance for life’s responsibilities leads to negative behaviors, thoughts, beliefs, and attitudes toward themselves. The presence of these self-defeating emotions and behaviors can be detrimental to their recovery efforts and is suggestive of an out-of-control life. Additionally, participants who described their life as out of control were found to be involved with either the judicial system, drug court, or DFS.

The subcategory view of self during addiction treatment suggests a relationship with three other subcategories responses to addiction challenges and responses to gratitude during recovery (moods of addiction), and personal aspirations (motivating factors; see Figure 6). View of self during addiction treatment describes the participants’ thoughts and feelings during their time in treatment for addiction. The properties that further define this subcategory include identity, accountability, acceptance, and insights. During the treatment process for addiction, participants take the time to examine their past life. Participants were searching for their
identity during active addiction by statements of “who am I?” and “I did not know who I was.” Some begin to take accountability and accept life as they know it right now. Participants who have achieved sobriety and are serious about recovery begin to feel thankful for their addiction (responses to gratitude during recovery). Until the participant achieves this level of seriousness in recovery, they still have negative thoughts and feelings (responses to addiction challenges). During recovery, the participants are motivated by their aspirations to regain what was lost, including their children, freedom, and self-confidence.

The subcategory of encounters with provider disengagement has a relationship with responses to addiction challenges (moods of addiction; see Figure 6). When the healthcare provider ignores the participant’s history of SUD, this leads to a continuation of negative emotions and behaviors. Kate admitted to prolonged denial of her disease when the provider did not engage in conversation about addiction.
Figure 6

Relationships Identified for Subcategories Within Category 2: Dynamics of Addiction

Relationships Identified:
**Dynamics of Addiction:**
- **Loss of Control**
  - Organizational Systems
  - Responses to Addiction Challenges *(Bidirectional)*
- **View of Self During Addiction Treatment**
  - Responses to Addiction Challenges
  - Responses to Gratitude During Recovery
  - Personal Aspirations *(Bidirectional)*
- **Provider Disengagement**
  - Responses to Addiction Challenges
Category 3: Moods of Addiction

The moods of addiction category describe the participants’ response to their thoughts and actions related to their SUD. Their responses included the time during active addiction and recovery. The addiction process is not easily understood and has posed challenges and debate for scientists, healthcare providers, philosophers, communities, families, and individuals since the early years of addiction research and discovery (Foddy, 2010; Hatterer, 1982; Sinnott-Armstrong & Pickard, 2013; Sussman & Sussman, 2011). The research is clear that addiction is more than just a physiological dependence on a substance (Hollbrook, 2015; Jumah et al., 2015). An impairment of psychological functioning occurs in association with addiction (Hollbrook, 2015; Jumah et al., 2015).

Long-term psychological effects of psychiatric symptoms were present among the research participants. The findings of this study are congruent with the literature. These women are faced with specific feelings of guilt, shame, and embarrassment (Jumah, 2016; Kramlich et al., 2018; Kozhimannil et al., 2019). Psychological impairment was evident from the participants’ reflective statements about the onset of use and during active addiction. The participants’ decision to use substances as a way to cope with life situations of stress and grief, resulted in negative psychological responses. Their entry into active addiction already included feelings of low self-esteem. This negative psychological response was exacerbated by prolonged substance use. A few examples of negative psychological responses described by the participants include feelings of hopelessness, resentment, ashamed, inadequacy, anxiety, demoralization, and suicidality. Discussion about mental illness was not included in this study.

Psychological impairment was also demonstrated by the participants in their statements of denial during active addiction. The addicted individual often exhibits behaviors that result in a lack of accountability (Jackson & Shannon, 2012b). This lack of accountability is referred to as
denial (Jackson & Shannon, 2012b). Participants failed to see that their lives had become unmanageable during active addiction. Their statements of denial included “I did not believe I had an addiction yet” (Jess, line 365). “I did not think of it [addiction] as a problem at the time” (Peaches, line 254).

Additional data from this study revealed positive psychological responses as a result of addiction. Participants described feelings of gratitude for their addiction. There appears to be no literature on gratitude in the population of rural pregnant women appears to be unavailable. However, empirical evidence on gratitude and addiction is available in the broader literature. Gratitude was first mentioned in the Alcoholics Anonymous (AA) literature as an important aspect of treating alcohol dependence (Charzynska et al., 2020). Gratitude is a positive emotional experience as a response to a benefit received from an external source which can be from a human or nonhuman factor (Leung & Tong, 2017). Future research could better inform this finding.

**Relationships Among the Subcategories for Moods of Addiction**

The subcategory responses to addiction challenges have a bidirectional relationship with the subcategory loss of control (dynamics of addiction; see Figure 7). Responses to addiction challenges are the distorted feelings and behaviors of the participants because of their substance use. The properties of pessimism, negative behaviors, and denial further describe this subcategory. The participants’ negative thoughts, behaviors, and denial are fueled by a life that is out of control. They have irrational thoughts and behaviors that are influenced by their SUD.

The responses to gratitude during recovery subcategory (moods of addiction) has a bidirectional relationship with the subcategory personal aspirations, and a unidirectional relationship with support systems (motivating factors; see Figure 7). Participants are motivated into a life of sobriety by the desire to be clean for their children, focus on themselves, and
regain a feeling of confidence. Participants shared that they experience more positivity, contentment, and graciousness in life when they are sober. Therefore, being able to focus on themselves gives them the confidence they need to make more rational choices in life.

Participants wish to end their substance use to become better parents and be more active in their children’s life. They wish to regain custody of their children. The only way for them to be reunited with their children is to live a sober life. Lastly, the participants are thankful for their support systems, defined as the people who continue to cheer them on. The support systems are healthy relationships with family members or people they meet during treatment. Support needs to be available and received during good and bad times.
Figure 7

Relationships Identified for Subcategories Within Category 2: Moods of Addiction

Relationships Identified:

Moods of Addiction:
- Responses to Addiction Challenges
  - Loss of control (Bidirectional)
- Responses to Gratitude During Recovery
  - Personal Aspirations (Bidirectional)
  - Support Systems
  - Support Systems (Bidirectional)

Dynamics of Addiction:
- Loss of Control
- View of Self During Addiction Treatment
- Encounter with Provider Disengagement

Onset of Use:
- Getting Started
- Developmental Maturity

Motivating Factors:
- Personal Aspirations
- Support Systems
- Organizational Systems
Category 4: Motivating Factors

The category of motivating factors describes the participants’ responses for what motivated them to seek and remain in treatment for addiction. A majority of the participants described their children as the primary motivation for seeking and remaining in treatment. Participants described the personal self as a secondary motivation for seeking and remaining in treatment. For many of the participants, they had encounters with the justice system, drug court, and DFS. The participants had a real fear of losing their children for good or losing future children if they did not seek treatment. These findings are congruent with the literature. In a qualitative research study conducted by Stone (2015), 22 of the 30 participants reported being afraid they would be identified as using substances during their prenatal visits, voiced fear of losing custody of their newborns and/or their children, and fear of facing the criminal justice system. Fears of having their children taken away are real. Women with SUD are viewed as not having the requisite qualities to parent adequately (Kramlich et al., 2018).

Much debate remains about whether moral and legal punishment should exist for acts committed by the individual when under the influence of their disease (Foddy, 2010; Kramlich et al., 2018). Many of the participants in this study described their entanglements with the justice system because of their SUD. Several participants experienced multiple convictions. These findings are in alignment with the literature. Pregnant women with addiction may face arrest, prosecution, or conviction (Stone, 2015; O’Connor, 2019). Most of the women in the United States criminal justice system are facing nonviolent charges (O’Connor, 2019), and 82% of them are dependent on either drugs or alcohol. Nearly, 6% of the women are pregnant at the time of the arrest, which results in approximately 9,430 pregnant women in prison across the United States (O’Connor, 2019). Conversely, it is important to note that the participants from this study who served time in prison/jail continued their substance use once released. This finding relates
to the debate found in the literature on whether or not incarceration is the right answer for these women.

Participants from this study did not find recovery success from drug court. Only two of the four participants ordered to drug court shared stories of success. These findings are consistent with the literature. Forcing women with addiction into treatment appears logical when focusing on the health of the mother and infant; however, the success rate is poor (Ryan & Deci, 2008). Conversely, a pilot study program discovered success when they provided health education and socialization for pregnant women ordered into drug court and considered the effects of constrained choice (Holsapple & Jensen, 2014). Constrained choice refers to an understanding of the competing demands and limited resources that can affect an individual’s choices within the constraints they face (Holsapple & Jensen, 2014). Study results include decreased infant mortality and improved healthcare outcomes for the mothers by completing the drug court requirements (Holsapple & Jensen, 2014). When women with SUD have assistance with navigating the system they are empowered with improved decision-making abilities and more autonomy over their life choices (Holsapple & Jensen, 2014).

**Relationships Among the Subcategories for Motivating Factors**

The subcategory of personal aspirations has a bidirectional relationship with the subcategories of view of self during addiction treatment (dynamics of addiction) and responses to gratitude (moods of addiction), and a unidirectional relationship with the subcategory loss of control (see Figure 8).

During the time of reflection while in treatment, the participants viewed themselves as being accountable and accepting responsibility for their actions. This is a time of insightful soul searching that leads to feelings of motivation for wanting to stop the addiction. Participants
regain their self-confidence when they stop using substances and take a moral inventory of themselves.

The bidirectional relationship of the subcategories of personal aspirations and responses to gratitude during recovery (moods of addiction; see Figure 8) reflects the participants’ time in recovery that leads to valuable soul searching. Participants realize how grateful they are for the deep connections they have made as a result of their addiction treatment. Their aspiration to be free from drugs and having confidence allows them to feel content with their life as it is now. Finally, the desire to be reunited with their children motivates them to persevere through the challenges that come along with recovery.

Lastly, the participants’ strong desire to live a life of sobriety is possibly explained by the experiences of having lost control. Their desire to be a better parent and regain custody of their children could be a response to their perception of having an out-of-control life. Participants shared that they had a desire to be free of drugs to regain confidence in themselves and have a better life.
Figure 8

*Relationships Identified for Subcategories Within Category 2: Motivating Factors*

**Onset of Use**
- Getting Started
- Developmental Maturity

**Dynamics of Addiction**
- Loss of Control
- View of Self During Addiction Treatment
- Encounter with Provider Disengagement

**Moods of Addiction**
- Responses to Stress & Grief
- Responses to Addiction Challenges
- Responses to Gratitude During Recovery

**Motivating Factors**
- Personal Aspirations
- Support Systems
- Organizational Systems

*Relationships Identified:*
**Motivating Factors:**
- Personal Aspirations
  - Responses to Gratitude During Recovery (*Bidirectional*)
  - View of Self During Addiction Treatment (*Bidirectional*)
Comparison to Self-Determination Theory

The findings are suggestive that the use of SDT comprehensively addresses the research questions. SDT is organized into three fundamental psychological needs; competence, relatedness, and autonomy (Deci & Ryan, 2002). Motivation is viewed as the fourth concept because it is the foundation of the three psychological needs (Deci & Ryan, 2002). Some social-contextual factors support the natural innate tendency to strive for personal best, and other social-contextual factors sabotage a person’s desire to do well (Deci & Ryan, 2002). In this study, the participants’ substance use is the sabotaging social-contextual factor. The consequences of their substance use have led to an out-of-control life, negative thoughts and behaviors, and entanglements with the justice system and DFS.

The participants in this study demonstrated a lack of innateness towards competence, relatedness, and autonomy. When people are satisfied with these three basic needs, they are predicted to have a healthy functioning existence. Conversely, when these basic needs are distorted, people will experience life functions that are not congruent with a healthy existence (Deci & Ryan, 2002). The participants of this study lack competence qualities. They did not have a sense of confidence during active addiction. They struggled with the ability to master their environment due to their SUD. An example of this is Kate’s description of herself stating she did not have confidence and always doubted herself. Kate continued to describe a feeling of second-guessing her thoughts and not having confidence in knowing whether or not her thoughts were true or a result of her substance use (lines 223-226). She was unable to make trusted decisions on her own because she lacked confidence in herself.

The second psychological need of relatedness refers to connectedness and belonging. The participants described feelings of isolation and being alone during active addiction. These findings are suggestive of the literature. Relatedness provides a sense of belonging or
connectedness to others; caring for others and being cared for by others create a sense of connection (Deci & Ryan, 2002). Findings from the participants revealed gratitude for stronger connections they had made with family and others in their life during addiction treatment and recovery. Stories from the participants before treatment described situations of intense loneliness and feelings of not having anyone to talk to about their problems. For example, Krys expressed her feelings of being alone and having no one to talk to when her dad passed away. This feeling of being alone is what led to her substance use (lines 111-114).

Autonomy is the third psychological need that refers to a person’s chosen behavior. The participants in this study lacked autonomy because of their SUD, resulting in the inability to choose to stop their substance use. Consequently, the aspects of their disease were so strong that their willingness to stop was not enough. The participants in this study have a willingness to stop using substances. They required the help of professionals at the treatment facilities to stop their substance use. An example of this inability to stop using substances is described by Louisiana and Kate. Both participants explained their strong desire to stop. The two participants shared that they knew their actions were hurting their unborn babies, but this was not enough to make them stop (Louisiana, lines 478-480; Kate, lines 72-76).

According to Deci & Ryan (2002), an individual’s choice to act is an autonomous decision, although, the opinions and desires of others can influence one’s choice of how to act. The participants identified the counseling staff in treatment as one of their main support systems. The counseling staff can influence the participants’ choice to stop using substances. When the participants had a positive connection with the counseling staff, they began to place value on the counselor’s opinion. The counselor-to-patient connection has a strong impact on the participant’s recovery.
During the participants’ time in treatment, they began to regain control of these three psychological needs: competence, relatedness, and autonomy. These psychological needs are necessary for creating sustainable intrinsic and extrinsic motivation. **Intrinsic motivation** includes behaviors derived from a person’s inherent satisfaction of behavior, the promotion of healthy behaviors for positive change, and has a focused dependence on the outcomes (Chan et al., 2019; Deci & Ryan, 2002). **Extrinsic motivation** includes behaviors that are not inherently interesting or valuable, these actions precipitate the desired outcome (Deci & Ryan, 2002). These extrinsic behaviors are usually prompted by a significant other or group. The participants are witnessing the positive behaviors, actions, and outcomes that are happening to the other members in the treatment facility. With the support received in treatment, the participants are eventually able to see themselves in a positive way, similar to the requisite qualities they are experiencing from the other group members. These positive self-images then motivate them to remain in treatment.

Motivation lies on a continuum beginning with amotivation (no motivation) and moving to intrinsic motivation (Deci & Ryan, 2002). Along the same continuum is self-regulation. This continuum begins with non-regulation and ends with intrinsic regulation (Deci & Ryan, 2002; see Table 4). The findings of this study revealed characteristics of amotivation and non-regulation during the participants’ descriptions of active addiction. Their lack of competence and autonomy is congruent with these findings. They have a willingness to stop their addiction but lack the intrinsic motivation and regulation to stop. Findings of intrinsic motivation and regulation were discovered when the participant was actively engaged in the treatment process.

**Limitations**

This study does have a few limitations. Study limitations include limiting the research to a singular type of data (semi-structured interviews). This method of data collection provides
valuable information but adding additional methods of data collection such as focus groups, storytelling, chart reviews, and/or surveys would strengthen the study results. Due to the time constraints for the completion of this study, the idea of gathering multiple sources of data was eliminated. Data on the participants’ attendance in public meetings such as AA or NA was not included. Having this information may have provided more insight into the availability of resources for rural Missouri women with SUD. An additional limitation was the number of living children. This data included women with at least one living child. Having more first-time pregnant participants with no living children may have changed the interview data regarding the motivating factors for seeking and remaining in treatment. Lastly, data on mental health issues were unknown. Having insights into the participants’ mental health concerns may have led to more informed data comparisons.

**Implications**

Implications for future research, practice, and policy will be discussed in the following sections. Expansion of the participant base will provide greater insights into the experiences of rural pregnant women with SUD. Access to more data will assist healthcare providers and policymakers to understand what motivates this unique population of vulnerable women to achieve a life of successful sobriety.

**Future Research**

Future research should include qualitative data comparisons from rural regions among other states. Such data comparisons will lead to richer data and a greater understanding of the experiences and motivations of rural women with SUD during pregnancy. Other considerations for future research should include interviews with healthcare providers. It is essential to understand the experiences and perceptions of the healthcare providers who care for rural pregnant women with SUD. Understanding more about why so many providers do not
engage in conversations with these women about SUD will help improve the addiction treatment experience. Additional future considerations should include research on trauma exposure and coping abilities. Data from this study indicate these participants were subjected to traumatic experiences that led to self-medicating practices of substance use.

**Practice**

This study may assist rural healthcare providers and staff who care for pregnant women with SUD. The experiences and motivations identified in this study offer providers unique insights into the thoughts, behaviors, and actions of the rural pregnant woman with SUD. Understanding the experiences and motivations for seeking treatment will help providers ask more informed questions about SUD.

The participants listed several suggestions for ways healthcare providers could improve the addiction treatment experience. Participants suggest providers engage in more honest and compassionate conversations with their pregnant patients who are struggling with addiction. Additionally, they recommend the providers have a non-judgmental attitude. Several of the participants described negative experiences with their healthcare providers during pregnancy. Most of the participants described experiences of being ignored by their providers. Participants shared that the healthcare provider and staff did not ask questions about substance use or past histories of substance use. This behavior caused the participants to feel unimportant. Findings from this study suggest that rural women with SUD do not receive adequate care from their healthcare providers.

Evidence indicates that when healthcare providers are “autonomy-supportive” patients respond with positive behavior changes and improved health outcomes (Deci & Ryan, 2002). Autonomy support comes from the SDT literature and refers to the interpersonal climate between healthcare providers and patients in which the provider is mindful of the patient’s
perspectives (Deci & Ryan, 2002). The provider offers choices and encouragement and has meaningful interactions with the patient by including the patient in health care decisions (Deci & Ryan, 2002). Providers should ask patients questions about their past behaviors, listen intently, speak in an understandable language, and eliminate judgment (Deci & Ryan, 2002). Provider engagement without judgment may facilitate autonomous motivation to improve the lives of rural pregnant women with SUD and their unborn babies.

Policy

This study sheds light and understanding for policymakers about the experiences of rural pregnant women with SUD. Much of the literature focuses on urban women who are pregnant with SUD. Policy and decision-makers must understand the unique challenges and differences rural women face. Rural pregnant women are faced with transportation concerns when accessing care. Several of the participants in this study pointed out that transportation was not a concern for them because the treatment facility they attend provided transportation. This finding is supportive of the need for more policies that include costs devoted to including transportation to and from treatment appointments. Additionally, the data suggest that it is necessary to revisit government policies that include incarceration for pregnant women with SUD. Data collected from the participants demonstrate that forced treatment for addiction does not lead to sustained recovery.

Lastly, policymakers should reconsider where drug prevention and treatment monies are allocated in rural Missouri. Even with a rise in opioid use among rural pregnant women in Missouri, MA was the most common drug of choice referenced. Pregnant women with SUD in rural Missouri are not receiving proper attention.
Conclusion

The data collected from this study answer the two research questions regarding the experiences and motivating factors of rural pregnant women with SUD. This study provides additional understanding of the process of addiction during pregnancy among rural women. This group of women began using substances during their teenage years as a way to cope with life-changing events such as death, trauma, abuse, and family problems. The pattern of substance abuse continued as a way to cope with daily life and family problems. Descriptions of negative self-perception and behaviors were common for all participants. Rural pregnant women with SUD feel alone. They wish they could stop using substances but the addiction is too strong to quit alone. They rely on the support and help of trusted professionals who understand the process of addiction. Future studies of rural pregnant women with SUD will provide a more complete understanding of their experiences and motivation to seek and remain in addiction treatment.
References


Missouri Department of Mental Health. (MDMH; 2019). County links. https://dmh.mo.gov/alcohol-drug/county


dependence. https://cde.drugabuse.gov/instrument/d7c0b0f5-b865-e4de-e040-bb89ad43202b


Shahram, S. Z., Bottorff, J. L., Oelke, N. D., Kurtz, D. L. M., Thomas, V., Spittal, P. M. & and For the Cedar Project Partnership. Mapping the social determinants of substance use for

https://doi.org/10.1080/17482631.2016.1275155


https://doi:10.1111/ajad.12155


Substance Abuse and Mental Health Services Administration (SAMHSA; 2014). State policies in brief: Substance abuse during pregnancy.

Substance Abuse and Mental Health Services Administration (SAMHSA; 2021a). Medication-assisted treatment. https://www.samhsa.gov/medication-assisted-treatment

Substance Abuse and Mental Health Services Administration (SAMHSA; 2021b). Recovery and recovery support. https://www.samhsa.gov/find-help/recovery


Mental Health, *European Addiction Research*, 21(3), 144-152.


https://www.harmreductionjournal.com/content/9/1/5


https://doi:10.1097/AOG.0b013e3181ed8290


February 15, 2021

Principal Investigator: cwd27
Department:

Your IRB Application to project entitled A Qualitative Analysis of Rural Pregnant Women's Experience with Substance Use Disorder was reviewed and approved by the UMSL Institutional Review Board according to the terms and conditions described below:

IRB Project Number
2041502 IRB Review Number 290505

Initial Application Approval Date
January 21, 2021

IRB Expiration Date January 21,
2022 Level of Review Full
Board Application Status Approved
Project Status Active - Open to Enrollment Risk Level Greater Than Minimal Risk Type of Consent Written Consent

Updated Informed Consent_V2
Updated Interview Guide_V2 Updated Flyer_V2
Approved Documents

Updated Confidentiality Agreement_V2 Updated
Protocol_V2
Interview Guide & Script
Letters of Support from rural Missouri treatment facilities, and a letter of support from Dr. Julie Bertram (Advisor/Co-Investigator).

The principal investigator (PI) is responsible for all aspects and conduct of this study. The PI must comply with the following conditions of the approval:

1. Enrollment and study related procedures must remain in compliance with the University of Missouri regulations related to interaction with human participants following guidance at http://www.umsl.edu/recd/compliance/umsl-guidance-covid19-restart-6.25.2020.pdf
2. No subjects may be involved in any study procedure prior to the IRB approval date or after the expiration date.
3. All unanticipated problems must be reported to the IRB on the Event Report within 5 business days of becoming aware of the problem. Unanticipated problems are defined as events that are unexpected, related or possibly related to the research, and suggests the research places subjects or others at a greater risk of harm than was previously known or recognized. If the unanticipated problem was a death, this is reportable to the IRB within 24 hours on the Death Report.
4. On-site deaths that are not unanticipated problems must be reported within 5 days of awareness on the Death Report, unless the study is such that you have no way of knowing a death has occurred, or an individual dies more than 30 days after s/he has stopped or completed all study procedures/interventions and required follow-up.
5. All deviations (non-compliance) must be reported to the IRB on the Event Report within 5 business days of becoming aware of the deviation.
6. All changes must be IRB approved prior to implementation unless they are intended to reduce immediate risk. All changes must be submitted on the Amendment Form.
7. All recruitment materials and methods must be approved by the IRB prior to being used.
8. The project-generated annual report must be submitted to the IRB for review and approval at least 30 days prior to the project expiration date. If the study is complete, the Completion/Withdrawal Form may be submitted in lieu of the annual report.
9. Securely maintain all research records for a period of seven years from the project completion date or longer depending on the sponsor’s record keeping requirements.

10. Utilize the IRB stamped consent documents and other approved research documents located within the document storage section of eCompliance. These documents are highlighted green.

If you are offering subject payments and would like more information about research participant payments, please click here to view the UM Policy: https://www.umsystem.edu/ums/policies/finance/payments_to_research_study_participants

If you have any questions, please contact the IRB Office at 314-516-6489 or irb@umsl.edu. Thank you,
UMSL Institutional Review Board
April 22, 2021

Cami Weber, MSN, MBA, RN
719 River Hills Drive
Fenton, MO 63026

Dear Ms. Weber:

After analysis by the Professional Review Committee, I hereby approve your research project titled, “A Qualitative Analysis of Rural Pregnant Women’s Experiences with Substance Use Disorder.”

Pursuant to Missouri Revised Statutes 630.194, you are required to submit the attached Research in Progress – Regular Review form every six months for the duration of the research. Please send to PRC@dmh.mo.gov. The six-month progress reviews will be monitored by my office. A reminder will be sent to you when a six-month review is approaching.

Please remember that when your project is complete you are also required to submit a final report of your research.

Good luck with your project. If you have any questions, you may contact me at Brooke.Mayfield@dmh.mo.gov.

Sincerely,

Brooke Mayfield, PhD
PRC Chairperson
Appendix C

Do you live in a rural community?
Did you receive treatment for substance use disorder while pregnant or after pregnancy?

Research Study
University of Missouri St. Louis IRB has reviewed and approved this research study

Volunteers needed
for a study about the experience of substance use disorder treatment during pregnancy.

If you received treatment for substance use disorder while pregnant or up to five years after pregnancy and live in a rural community will you share your experience?
Confidential audio-recorded conversations with a nursing researcher (approximately 1 hour).
$25 gift card will be provided with interview completion

Please contact:
Cami Weber to learn more or schedule an interview.
Email: cwd27@umsystem.edu
OR
Call: 314-378-2891
Appendix D

Interview Guide

Thank you for your participation in this research study. As you know, I am interested in learning about your experiences with living in a rural community and receiving treatment for substance use disorder while pregnant. I would like to learn all that I possibly can about your experience so that I can adequately describe your experiences to help other healthcare workers understand this population of women. With your permission, I will be audio recording this conversation. I will tell you before I begin the recording.

I will be asking you several questions about your experience. However, I want you to take all the time you need to think about the questions before answering. I will gladly repeat any questions you wish. If for any reason, you are not comfortable with a question please let me know and we will skip that question. Even though I have a list of several questions, it is my goal that we can have a relaxed conversation about your experience.

The audio recording will be typed up word for word. In order to maintain confidentiality all personal identifying information will be removed such as your name, the names of others, or anything unique that could identify you will be removed. Do you have any questions about this process?

An additional step I will use to protect your identity, I will not be using your real name. I invite you to pick a name you would like for me to use. Do you have a preference?

Great, let’s begin our conversation; I will now begin the audio recording...

The audio recording has started and we will now begin our conversation. As you already know, I am interested in your experience with living in a rural community and receiving treatment for substance use disorder while pregnant. First, I have a few general (demographic) questions that I would like to ask, and then I will begin with the interview questions.

Demographic Questions
1. How old are you?
2. What is your race?
3. What was the last year of education you completed?
4. Where do you live?
5. What is your relationship status?
6. How many children do you have? What are their ages?
7. Who lives in your home with you?
8. How many weeks pregnant are you?
9. Is this your first time going through treatment? If not, tell me about the times prior to this time that you attended treatment for addiction.
10. What is your drug of choice? Are there other substances that you have used in the past?

That is all of the general questions. Do you have any questions for me before I proceed with the interview questions? Ok, let’s begin....
As I have explained I am really interested in learning about you and your experience with substance use disorder and treatment during pregnancy. First, I would like to learn more about you, tell me about yourself. How would you describe what life is like living in a rural community?

**Primary Topic Interview Questions**

1. In your own words, describe what it means to you to have an addiction?
2. Thinking back to as far back as you can remember, tell me about the first time you realized you were abusing substances or knew you had an issue with addiction? Were there any life events that triggered you to begin using substances?
3. Explain what life was like for you being pregnant and attending your treatment appointments.
4. Think back to your first appointment at the treatment center. Explain how you remember that day. What were the ways you experienced that treatment center?
5. What would you say was the strongest motivating factor that caused you to seek treatment for your addiction?
6. What other motivating factors caused you to seek treatment for your addiction?
7. What made you decide to seek treatment for your addiction? Given that there were a lot of things that factored into your decision, what was the most important reason you chose to go to treatment?
8. Living in a rural community I recognize that you have to travel quite a distance to attend your appointments at the treatment center. Was there anything that kept you from attending scheduled appointments at the treatment center?
9. Tell me about any barriers or obstacles in your way that has made it more challenging for you to attend your scheduled appointments at the treatment center.
10. Tell me about the first conversation you had with your doctor about addiction during your prenatal care visits. What was that experience like for you?
11. Still thinking about the visits, you have regularly with your doctor for prenatal care, what are the conversations like about your addiction and treatment? If you could offer advice to doctors caring for pregnant women with addiction, what would you want to tell them?
12. Similar to the last question, if you were able to speak with other pregnant women in rural communities who have experience with addiction while pregnant what would you want to tell them?
13. Many times, when people seek treatment for addiction they can be faced with people who may not support their decision. Thinking about the people in your life, how would you describe people like this that did not support you seeking treatment for addiction?
14. Describe the people in your life that provide you with the greatest support. What kind of support and encouragement do you receive from them? What does that support look like to you? How would you describe the support you have received?
15. I have learned from others, that you can be treated quite poorly when they learn of your battle with addiction while pregnant. What has this been like for you?
16. Looking back what would you say has been your most difficult thoughts or feelings related to your addiction? What has been your greatest challenge?
17. Still looking back on your life while receiving treatment, what would you say has been the most rewarding?
Subsequent Interview Questions (may or may not be used)

1. When you decided to seek treatment for addiction what were the options for treatment when you began to look? What factors were involved in the selection of your treatment center? What made you choose this treatment center?
2. Describe any other people in your life that are currently experiencing problems with addiction.
3. How many times have you gone through treatment for addiction?
4. Tell me about your relationships with others that use substances.
5. What led you to the decision to seek treatment for your addiction?

Is there anything more you would like to share that I did not ask?

As you know, the information shared from this study will be used to help healthcare workers gain a better understanding of the experiences of rural women receiving opioid treatment while pregnant. Is there anything more that you think would be helpful to know for the purposes of this research study?

Thank you so much for your time and for sharing your honest experiences. The information you shared with me today will certainly be appreciated by all healthcare workers.