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Development of a project to improve prenatal education at a rural medically assisted treatment center focused on neonatal abstinence syndrome and parenting skills.

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Development of a Project to Improve Prenatal Education at a Rural Medically Assisted Treatment Center Focused on Neonatal Abstinence Syndrome and Parenting Skills

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DEDICATION

To

My Fiancé

For your unconditional love and support through this whole journey. You have been my biggest cheerleader and kept encouraging me when I wanted to quit. You kept me motivated to reach my goal. You made sure I had everything I needed including plenty of caffeine. You inspired me to make a difference in the patients and their families. Planting a mustard seed in their hearts then allowing it to grow. Most of all you had faith in me that I would reach that goal by keeping faith not only in myself but even more importantly my faith in God. Putting God first above all. “Truly He is my rock and my salvation; He is my fortress; I will not be shaken” Psalm 62:2

Hope, Josh, and my Parents

For your encouragement and support. For all the sacrifices through the years and the lessons you have taught me. We have learned a lot along the way. It has not been an easy road but with all the strength and reassurance you provided I have become the person I am today. We as a family have pulled together and have kept God at our helm. “When I am in distress, I call to you because you answer me.” Psalm 86:7

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Abstract

Background: Many women who suffer from substance use disorder syndrome (SUDS) have low self-esteem and can be labeled as "unfit parents" which can impede infant bonding and maternal sobriety. Parent and self-efficacy are associated with improved maternal-infant attachment and sobriety (Adams, et.al. 2021). The earlier prenatal education is implemented, the more empowered the mothers will feel to be able to help their infants and themselves.

Setting: A medically assisted treatment center (MAT) for pregnant women who presents with SUDS. The six-bed inpatient facility is in a rural county in central Kentucky.

Purpose: To create an educational program about parent and self-efficacy for women receiving treatment at the MAT clinic. Education will be taught to women prior their delivery and those who have recently delivered. Education will include skills to enhance parenting efficacy and self-efficacy.

Procedures: Five knowledge and skill-building sessions offered at the treatment center in addition to the treatment center's programming. These sessions will be sixty minutes in length.

Measures: Pre/posttest evaluation of client's knowledge of the hazards of smoking, healthy self-preservation techniques, parenting efficacy, time management skills, and compassion fatigue.

Keywords: Substance use disorder syndrome. Pregnancy. Parenting skills. Self-efficacy

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Development of a Project to Improve Prenatal Education at a Rural Medically Assisted Treatment Center Focused on Neonatal Abstinence Syndrome and Parenting Skills

The opioid epidemic is a growing health concern across the world. An opioid, per the National Institute of Health (NIH), is a "class of drugs that include the illegal drug, heroin, synthetic opioids such as fentanyl, and pain relievers available by legal prescription such as Oxycodone, Vicodin, Codeine, Morphine and others" (NIH, 2020). The Centers for Disease Control (CDC) states that one out of every three women of reproductive age filled an opioid prescription each year between the years 2008 and 2012. Additionally, 7% of these women self-report drug use during pregnancy, one out of every five of these women misused these medications. The use of opioids at the time of delivery has quadrupled from 1999 to 2014 (CDC, 2020).

Maternal pregnancy concerns related to the use of opioids consist of pre-eclampsia, placental abruption, and preterm labor, per the March of Dimes (2019). Fetal and neonatal concerns, if opioids are taken during pregnancy can lead to serious problems such as premature birth, intrauterine growth retardation, feeding difficulties, breathing issues, and Neonatal Abstinence Syndrome (NAS). Birth defects including congenital heart defects, neural tube defects, glaucoma, and sudden infant death syndrome (SIDS) have also been associated with opioid use.

The World Health Organization (WHO) and the United Nations Office on Drugs and Crime (UNODC) stated in their World Drug Report of 2018 publication, that 275 million people used illicit drugs at least once in the year of 2016 (UNODC, 2018). The Kentucky Chamber Workforce Center affirms Kentucky's overdose death rate is the fourth highest in the nation and

is increasing by 11.5% each year. Jefferson County Kentucky has the highest rate of heroin and fentanyl related overdose deaths in the state (Noble & Ingram, 2020). Kentucky has one of the highest rates in the country of pregnant women using opioids at a rate of 10 to 19.9/1000 deliveries. (*Opioid Abuse in Kentucky*, 2019). The NIH stated in their national statistic for Neonatal Abstinence Syndrome (NAS) in 2018, that 7 per 1000 infants had NAS compared to Kentucky's statistic of 23.6 per 1000 infants (NIH, 2020). This is greater than three times the national average. These statistics show the grave nature of this disorder and its effect on Kentuckians and their infants.

Significance of the Problem

There is an overabundant amount of prenatal evidenced based information routinely provided to parents on the care of their "normal" newborn. However, there is insufficient prenatal evidenced based information that is provided to the addictive population on NAS and how to care for these infants (Giles et al., 2016). Infants exposed to opioids during pregnancy are at risk for several neurodevelopmental delays, which when identified early, can have better long-term outcomes. Shearer et. al. (2018) performed a comprehensive literature search on these delays and divided the delays into three categories: developmental, intellectual, and behavioral outcomes. Developmental outcomes showed a significant decrease in several scales of measurement including the Bayley Scales of Infant Development-Mental Development Index (MDI). These infants had a reduction in motor abilities from birth to two years of age. There was an increase in mild deficient cognitive function using the Stanford-Binet intelligence scale and the Reynell Expressive language scale. The behavioral outcomes were associated with a significant increase in attention-deficit/hyperactivity disorder (ADHD).

These long-term neurodevelopmental outcomes have interventional therapies which improves the overall quality of life for the child. The cost of the initial hospitalization and subsequent therapies can be in the tens of thousands of dollars per child.

A statistical analysis performed by Corr and Hollenbeak (2017) showed more than 315 million dollars were spent on neonatal admissions alone within the United States. The cost does not include therapies that are needed post hospitalization. An increase in public health initiatives to focus on prenatal education and early intervention needs to be considered.

The management of infants at risk for NAS includes standardization of protocols, with emphasis on non-pharmacological approaches and alternative treatment which are associated with better outcomes (Grossman et al., 2017). The overall cost in 2012 for 17,413 admissions of infants with NAS made up a total of 291,168 hospital days and a financial burden of $335,665,913 nationwide (Corr & Hollenbeak, 2017).

Many women who suffer from SUDS not only have low self-esteem, but many times they are labeled as “unfit parents” by health care professionals and the public (Chou, et. al., 2018). Strong maternal parent and self-efficacy have been associated with improved maternal-infant attachment (Adams, et.al. 2021). The earlier in their pregnancy this education can be implemented, the more empowered the mothers will feel to be able to help their infants and themselves, as well as decrease their stress. This improvement in attachment can lead to earlier intervention for any behavioral or developmental concerns of their infants.

Unfortunately, the addictive population has been growing over the past five to ten years. There is a big gap in education including changes in parenting skills, compassion fatigue, and time management. If healthy adaptation and efficacy skills are not implemented to reduce stress and depression, the result could not only be harmful to themselves but to their offspring as well.

By providing prenatal education to mothers including healthy ways to combat stress, time management skills to assist in meeting the obligations of maintaining sobriety, as well as self-preservation techniques, relapse may be avoided, and the family unit maintained.

Literature Review

PubMed, Google Scholar, and Cochran Database of Systematic Reviews were utilized to find relevant literature. The search terms and phrases included prenatal education, medically assisted treatment, neonatal abstinence, opioid treatment therapy, newborn drug withdrawal, opioid education, diagnosis of NAS, and nonpharmacological intervention for NAS. The inclusion criteria for this search included articles that took place in a community setting, listed non-pharmacological interventions for neonatal abstinence and those whose pregnant clients were treated with methadone, suboxone or no medications at all within a treatment program. Exclusion criteria used involved education that took place postnatally, if pharmacological interventions were used to treat infants in an outpatient setting, and if mothers were not in an active recovery program. The filters that were placed were to look for articles or abstracts that were no more than five years old, in English only. The search included meta-analysis, qualitative research, cohort, Prenatal Education systematic reviews, quality improvement and case control studies.

The initial search was completed from December 2020 through May 2021. A second search was conducted from September 2021 through October 2021. This additional search was needed to review and investigate additional topics: Smoking and pregnancy, compassion fatigue, and maternal/parental self-efficacy. These additional topics were determined after further discussion with the manager of the center and a second needs assessment.

Smoking

There are many forms of smoking. For this project, the discussion of cigarettes, THC, and electronic cigarettes (e-cigs) will be discussed. Per Dobbs et. al. (2021) in their study of gestational women's perception of smoking, they considered prenatal tobacco use a leading cause of preventable morbidity and mortality among infants. There is long standing research on the hazards of nicotine on the unborn fetus, and the mother, as well as the hazards of secondhand smoke. Nicotine, THC, and chemicals within e-cigs are substances that easily cross the protective placental barrier (Ryan & O'Conner, 2018). The exposure of a pregnant mother to nicotine, THC, or e-cigs either by her intake or that of secondhand smoke can significantly increase her child's risk of developing disorders such as asthma, other lung disorders, attention-deficit/hyperactivity-disorder (ADHD), hypertension, and potential cognitive disabilities. The CDC has stated that not only is smoking related to low-birth-weight infants but additionally linked to feeding difficulties, cleft lip and palate, problems with hearing and eyesight, and places the infant at a higher risk for sudden infant death syndrome (CDC.gov, 2020). Women who are in the recovery program from opioids can have improved long-term success with their opioid abstinence if they also participate in smoking cessation (Lung.org, 2019).

Compassion Fatigue/Self Efficacy

Self-efficacy refers to a person's belief in their ability to achieve a desired behavior. It is steered by their motivation, behavior, and social environment (Peterson & Bredow, 2004). During the addiction recovery process clients are challenged to focus on personal growth and to decrease the negative emotions associated with their SUDS. The theory of self-efficacy developed by Albert Bandura states that there are four diverse sources of self-efficacy. The first source is when a person feels as if they have had a successful experience no matter how large or small that experience is. The second source is observing others who have accomplished success.

The third source is verbal encouragement from someone that a person admires or looks up to. The final source is obtained when there are positive emotions even when approached with a stressful situation (Peterson & Bredow, 2004). A person suffering from SUD has difficulty in setting goals for themselves and an even more challenging time reaching them. Studies have shown that people who have higher levels of self-efficacy are more confident when handling demanding situations (Yang, et. al, 2019). Per Raynor and Pope (2016) state, "there is a strong link between a parent's overall health and their child's growth and development." The more education that is provided to this population group the more equipped they will be to successfully overcome their addiction and be better mothers to their infants.

Parental Self Efficacy

Parents in recovery are not only experiencing the stress of the addiction process and all the aspects of the recovery process, but they are also experiencing challenges in their parental role. Some mothers have lost custody of their children before entry into a recovery program; others are actively fighting for custody of their other children. These mothers may also face the confrontation of their children outside of their custody who may be asking and questioning: "why they cannot be with their mother?" As well as asking what they as the child did wrong to lead to this period of separation. Bandura's social and cognitive theory of substance abuse emphasizes the intentional changes in cognition, behavior, and emotions over time that focus on recovery and enhances positive health outcomes and adjustments to the maternal role (Raynor & Pope, 2016). Some of the changes that support positive parental self-efficacy may include taking time out for oneself, engaging in a pleasurable activity, or arranging for one-to -one time with a child which may enhance the relationship and open communication between mother and child.

Purpose and Specific Aims

The purpose of this quality improvement (QI) project was to create a prenatal education program for pregnant and recently delivered women receiving treatment at a rural inpatient Medication-Assisted Treatment (MAT) clinic. Education was taught prior to and/or shortly after their delivery. The short-term goal of this educational program was to improve the knowledge base of mothers on NAS, hazards of smoking, healthy ways to decrease stress, parenting skills, and time management to enhance self-efficacy. The long-term goal was to improve maternal stress that can lead to the relapse of these mothers, in addition to promoting healthy parenting skills, and bonding with their infant in addition to their other children. The specific aims for this QI project were:

1. Improve maternal knowledge of parenting skills that enhance parenting-efficacy.
2. Improve maternal self-efficacy and self-care.

Conceptual Framework

The Plan Do Study Act (PDSA) framework is a widely known technique that is used in rapid change improvement projects and is supported by the Institute of Healthcare Improvement (IHI). The PDSA cycle is used to incorporate minor changes and support repeated incremental improvements to a process or practice. The PDSA cycle provides four cyclic phases: “Plan” is the phase where a need for improvement is determined. Data is gathered about the current process and stakeholders are identified. “Do” is the implementation of the new process. Collection of data and unexpected obstacles are gathered. “Study” is the stage at which this data is analyzed. “Act” is deciding if the changes were successful or need modifications. This cycle evolves and supports continuous improvements (Spath, 2018, LoBiondo-Wood, Haber, and Titler, 2019).

This quality improvement project followed the Plan-Do-Study-Act model (See Appendix A). The "plan" focused on increasing the knowledge of NAS, self-efficacy, and parental efficacy of the mothers at the treatment center. A needs assessment was conducted at the center with the facility director. An analysis of the needs assessment in conjunction with a literature review determined that insufficient data was provided to the pregnant women at the center. Furthermore, it was discovered, the staff at the center would also benefit from further education to enhance their ability to support these mothers. Stakeholders were identified during this process. The "Do" phase was implementing prenatal education sessions with the clients at the center. These sessions occurred weekly for five consecutive weeks and lasted 60 minutes per session. Clients were encouraged to contribute to the sessions as well as staff members. Clients had their infants in their care during these sessions if they had recently delivered. Data was collected during five-weeks for analysis. The "Study" phase was the analysis of the data. Statistical analysis was used for interpretation of the data using the SPSS 28 program. A pre/posttest was used to evaluate if education was retained and effective. The outcomes of this QI project were then reviewed. The "Act" phase incorporated recommendations for additional change. It focused on the educational areas and if the change in practice were effective and provided the mothers with improved knowledge to care for their infants and themselves. If the improvements were partially successful, the cycle would begin again with those modifications addressed and continued changes made thereby the continued improvement in quality. If the improvements were not successful, the initial problem was addressed with new implementation ideas reviewed.

Methods

This QI project included five educational sessions offered at the rural inpatient treatment facility for pregnant mothers and those who have recently delivered. These sessions were 60

minutes in length. Since these women were inpatient, participation was incorporated into their current plan of treatment. The educational sessions were related to parental efficacy, self-efficacy, compassion fatigue, time management, and smoking hazards (See Appendices B, C, D, E, and F). Andragogy styles of learning were implemented as they support a higher level of learning (Major et. al., 2016). Methods included open discussion formats using fictional scenario examples, a gallery walk, and a sequence of metacognitive reflection exercises. Pre/posttests were given during these sessions to ascertain improvement in knowledge on each topic (See Appendices G, H, I, J, and K).

Setting

This QI project took place at a medically assisted treatment center (MAT) in a rural county in central Kentucky. The center was a six-bed inpatient facility that treated pregnant women suffering from SUDS. The women resided at this facility for a total of 90 days including pre and/or post-delivery time. It was part of a larger organization that provided behavioral health care and developmental services to seven different counties in Kentucky. The center provided many aspects of treatment including trauma related counseling, cognitive behavior therapy, relapse prevention, and substance use counseling approach in its 90-day program. It was funded either by private insurance or private donations. Some of the clients received methadone or buprenorphine to assist with their withdrawal symptoms. The clients who participated in the services offered at the center ranged in age from 18 to over 40 years old. Each mother had her own room in which she shared with her child/infant. The children who resided with their mothers varied in age, with most being newborns or toddlers. The staff consisted of three unlicensed adults who provided 24/7 supervision. There was also a registered nurse, counselor, and the director of the facility.

Though opioid use in the United States is escalating, the prenatal education provided to mothers with addiction in MAT programs is not routinely addressed. This population group is unique, as they are not only seeking treatment for themselves, but their unborn child as well. Without the staff support, and understanding of NAS, the mothers may have a more challenging time retaining and utilizing the new knowledge obtained during these educational sessions. These mothers overall are at a higher risk of postnatal relapse.

The stakeholders include the staff, clients, and their infants/children as well as the outside families/support systems of these mothers. Additional stake holders could include the nurse and counselor who provide services at the center.

A potential barrier identified was that the facility was noticeably short staffed at the time of the implementation of this project. They provide supervision 24/7 for the residents, however currently there are only two full-time staff members and no volunteers. Their usual staff is three to four full-time staff members with the addition of volunteers. An additional barrier identified, was that most of the women did not have primary physicians or pediatricians when they entered the facility. This can complicate care as these clients were unable to discuss the implications of their drug use with their pediatricians who provide long-term medical care for these infants.

Implementation

Prior to the implementation of this QI initiative, a flyer was displayed at the center to spark curiosity about the educational sessions. The flyer (See Appendix L) was displayed in the communal area of the center so that all the clients could view the brief introduction.

The first session included conversations concerning parental efficacy, focusing on parental obligations, including individualized time with each child and complications with communication related to SUDS. The second session covered information on self- efficacy

including healthy self-care techniques that promote, restore, and enhance good physical and mental health. The third session incorporated compassion fatigue, which is commonly seen in clients with SUDS. If not identified can lead to an increase in child abuse or neglect. The fourth session delved into concerns of incorporating other children into the family that may have been removed, jealousy matters between siblings, and how to explain custody issues to children in a positive manner. The discussions of time management and its challenges when trying to maintain sobriety and employment. The final session discussed the hazards of smoking cigarettes/THC/e-cigs. This session included not just the harm to the clients, but to their unborn and living children as well. Prior to each session a few moments were taken to recap the material covered in the previous sessions. Retrieving information that has previously been provided is an exercise in the phenomenon known as the "learning effect" and is associated with improved memory of the knowledge that was presented. Memory exercises improve overall memory (Lang, 2016).

Since this was a QI initiative, an informed consent was not required as it was exempt from human subjects' studies. Demographic data were obtained from the clients at the center. This data included the clients' ranges of ages, educational status, the county in which they resided, and the number of living children (See Appendix M). For the initial data collection, the client identified themselves using the last four digits of their cell phone number. In addition to the demographic data, a pre-session and post-session test were given to the participants at each session for comparison. All information collected was entered into a password protected computer and the paper copies were shredded to ensure privacy. All HIPPA procedures were maintained for the duration of this project.

Measures

A pre/posttest was presented at each session that consisted of five questions, excluding the first session. During the first session the tool of measurement that was implemented was the Parenting Sense of Competence Scale (PSOC) (See Appendix G). This questionnaire is commonly used with parents whose children are under the age of ten years old to evaluate parental competency, their level of satisfaction, and parent efficacy. The PSOC was originally developed in 1978 by Gilaud-Wallson and Watersman and then revised in 1989 by Johnston and Mash. Cronbach's alpha coefficients of .75 for the satisfaction scale and .76 for the efficacy scale were reported. Parental efficacy strongly correlates with the PSOC scores. The PSOC is a seventeen-question questionnaire that was presented in a Likert-scale format with ratings ranging from one to six. One is strongly disagree, two is somewhat disagree, three is disagree, four is agree, five is somewhat agree and six was strongly agree. The minimum score was 17 and the maximum score was 102 (See Appendix H). A higher score was associated with higher parental satisfaction. The PSOC was freely available in the public domain (Gilaud-Wallston, 1978). Scores will be manually calculated according to the author's scoring instructions to ensure validity and reliability.

After an unsuccessful and exhaustive search for a test of measurement for the remaining sessions, it was decided that a self-developed pre/posttest would be implemented. Each of the tests were comprised of five questions written in the Likert-type self-reported questionnaire (See Appendices H, I, J, and K). One strongly disagreed, two disagreed, three was neutral, four was agree and five was strongly agree. The minimum score was five and a maximum score of twenty-five could be obtained. The higher the post-test score the higher the participant comprehension. Scores were manually calculated.

Data Analysis

Data that was collected during each session was entered into an excel spread sheet. This data sheet was then extrapolated for analysis. Descriptive statistics were used to describe the population group at the center. Each of the demographic criteria was reported in the form of percentages and means. Statical analysis using SPSS version 28 was used to compare the means of the weekly per/posttests assessments utilizing a paired *t*-test. The level of significance was set at $p = .05$. Any pre and posttests received that did not include the last four digits of the client's cell phone number or those that were not complete were excluded.

Ethics

The project received approval from the agency's regional supervisor (See Appendix N) and was submitted to the University of Louisville Human Subjects Research and Institutional Review Board (IRB) prior to the implementation phase. The IRB determined this project to be quality improvement, not human subjects research (See Appendix O).

Results

Once all prenatal educational sessions were completed, data was sorted and analyzed. Entry data sets were excluded if: a) the set provided a name and did not provide the four-digit unique identifier; b) there was not a completed pretest with accompanying posttest for the session; and/or c) the demographic form was incomplete.

After filtering and analyzing the data entries from all five educational sessions that had both pre and post assessment forms, as well as completed with a unique four-digit identifier, there were 29 matching sets. One data set from the first educational session was dismissed and two data sets were dismissed from the second session for incomplete pre/post assessment forms.

Across the project implementation phase, a total of eight women participated in the project. Due to mandatory meetings with their therapist, eight participants were able to attend all five sessions. The lowest number of participants was five and the greatest number was eight.

To better describe the participants in this project the mean age, education level and number of living children were analyzed. Data were entered into an excel spread sheet and it was determined that the mean age was within the range of 28 and 32 years old (Figure 1). The mean educational level was participants obtaining their graduate educational degree (Figure 2). The average number of children per participant was three (Figure 3).

Data analysis demonstrated a statistically significant improvement in post assessment scores in all the sessions except for the first session [see Table 1]. For the first session, the mean pre-assessment scores (M=59.2, SD = 5.59), were lower than the post assessment scores (M= 62.2, SD = 4.09) regarding questions about parental efficacy; $t(4) = -2.982$, $p = .02$. The session that showed the greatest statistically significant improvement was the third session. The pre-assessment score (M=11.86, SD = 4.49) were lower compared to the post-assessment score (M=23.71, SD= 1.50) regarding compassion fatigue; $t(6) = -7.108$, $p < .001$.

Discussion

As discussed earlier, mothers who suffer from SUD have unique challenges to maintain their sobriety. Prenatal education is imperative to enhance maternal infant bonding as well as increase the success of their sobriety. This manuscript provides evidenced based research that shows that prenatal education can have a positive impact on increasing the knowledge of mothers with SUD in areas that will assist in their success with sobriety as well as promote infant bonding. Research shows that prenatal education contributes to a working knowledge base. This

education must continue. The more information these women are provided, the more tools they have for success.

Education comes in a variety of formats that meet andragogical needs. The format can be adjusted to meet the needs of the specific group each session, as the specific client population changes, however the overall content should remain consistent thereby providing reinforced consistent information to the client. The styles that worked best for the sessions during this QI project were the gallery walk and "think-pair-share" in which the participants formed pairs and shared information and then shared the information with the group.

Interpretation

There were two specific aims for this project. The first aim was to improve the mother's knowledge of parenting skills and improve parental efficacy. Results showed that there was a slight improvement in parental efficacy in the first session, though not statistically significant. Parenting skills were discussed during the sessions about compassion fatigue as well as time management. These did show promising results. The second aim was to increase maternal self-efficacy and self-care. Those results deemed that this was possible with continued education that involved active participation.

There were unexpected positive experiences during these sessions. The first was, that as time went on and the program continued, the participants started to openly communicate more, not just with each other but with the facilitator as well. This built a strong rapport that enhanced the depth of topics discussed and provided the opportunity to discuss difficult topics, such as domestic violence and unhealthy relationships.

Another positive experience was that the women built each other's spirits up. They openly spoke about each other's positive qualities. Women with SUD are aware of their negative

qualities so to witness them building each other up in spirit was something remarkable. These are some of the tools that they will need to maintain sobriety.

The PDSA cycle of QI projects was formulated to ensure adjustments in format and content for rapid cycle improvement. Using the information obtained during the first cycle of this project, incremental adjustments can be made to optimize the education the clients obtain and retain.

Limitations

Limitations were identified. The first limitation identified during two of the educational sessions was two participants that had their monthly 1:1 session with their program advisor during the time of the educational sessions. This was a mandatory compliance meeting for the facility. The second limitation was that there was inconsistency of weekly individual participants. Some participants had graduated from the program and were replaced with new admissions to the Center. This impacted the consistent number of weekly participants. A third limitation encountered was not an anticipated one. The clients at the MAT receive their methadone at different intervals and doses. Pending their dosing time and amount, their state of alertness was altered. This limitation may have impacted the results of the paired sample t-test resulting in a difference between the pre and post assessment scores that were not accounted for.

Conclusion

The project has provided evidenced based research with results that support added information provided during prenatal educational sessions to women with SUD can impact and improve their knowledgebase. Education is a tool that can be used by these women that will support their road to sobriety. Results of this project will be submitted to the University of Louisville School of Nursing, presented at the Poster Presentation, and shared with the

interventional site for revision using the PDSA cycle with the continuation of the prenatal sessions. As the investigator of this project my investment in this center and future participant is to continue these sessions in conjunction with the site manager after adaptations have been made to the current cycle based on these findings and the needs of the center.

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Table 1

Pretest and Posttest Mean Comparisons by Prenatal Educational Sessions

Prenatal Session	**N**	Pretest *M (SD)*	Posttest *M (SD)*	*p* value
Parental efficacy	5	59.2 (5.59)	62.2 (4.09)	.082
Self-efficacy	5	21.6 (3.44)	24.2 (1.79)	.020
Compassion Fatigue	7	11.86 (4.49)	23.71 (1.5)	<.001
Time Management	7	17.57 (8.02)	24.43 (.98)	.027
Smoking Hazards	5	15 (4.00)	25 (0)	.003

Figure 1

Age of Participants

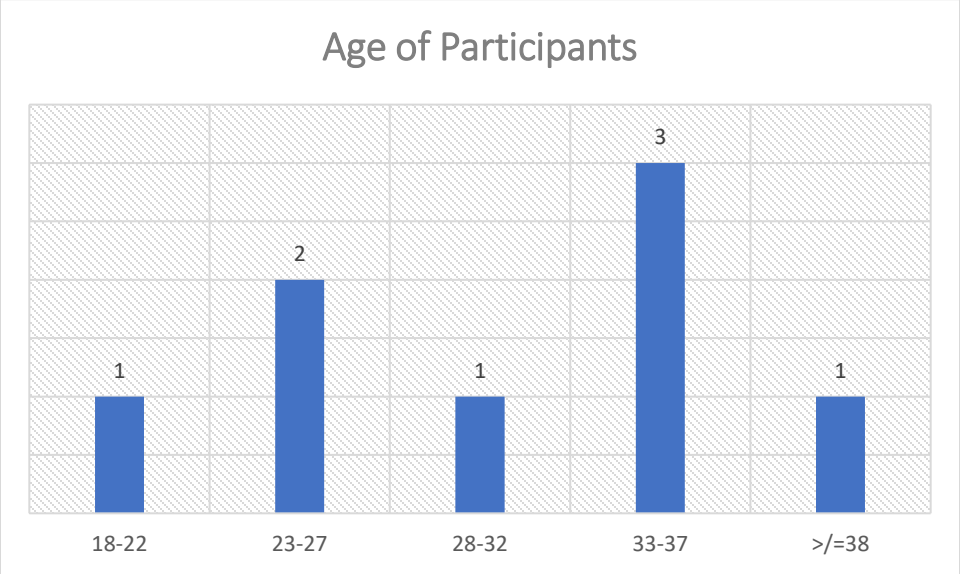


Figure 2

Educational Level of Participants

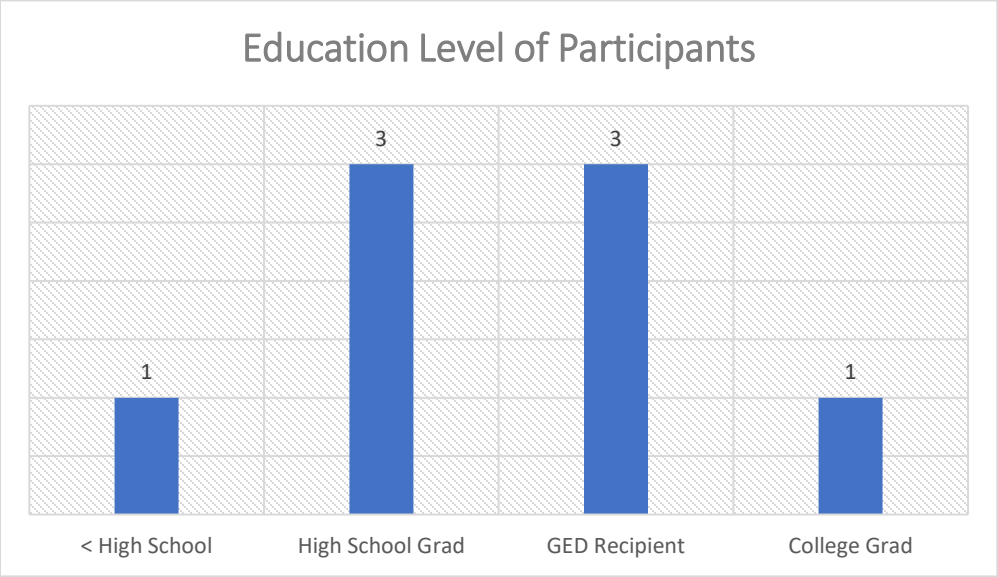
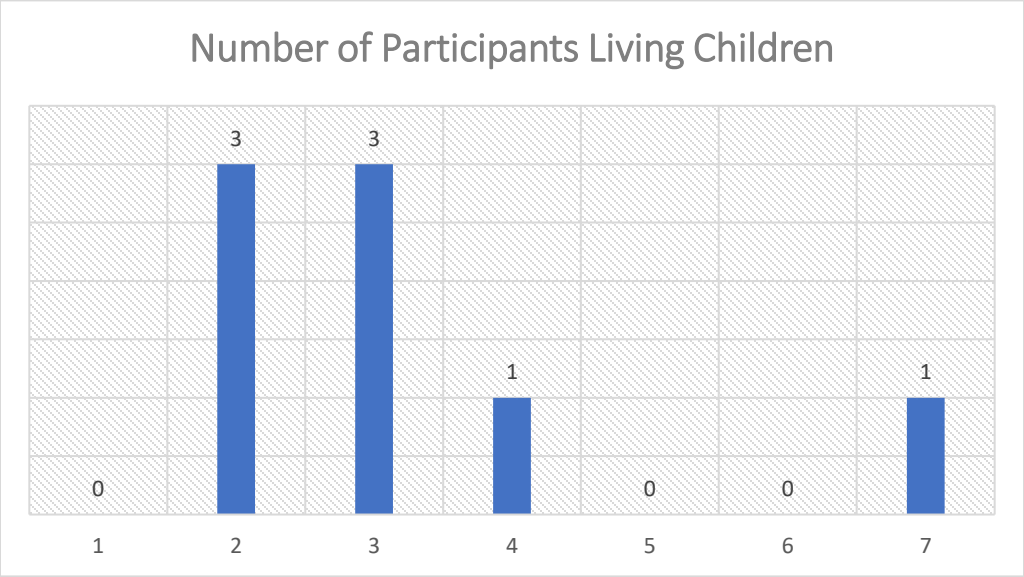


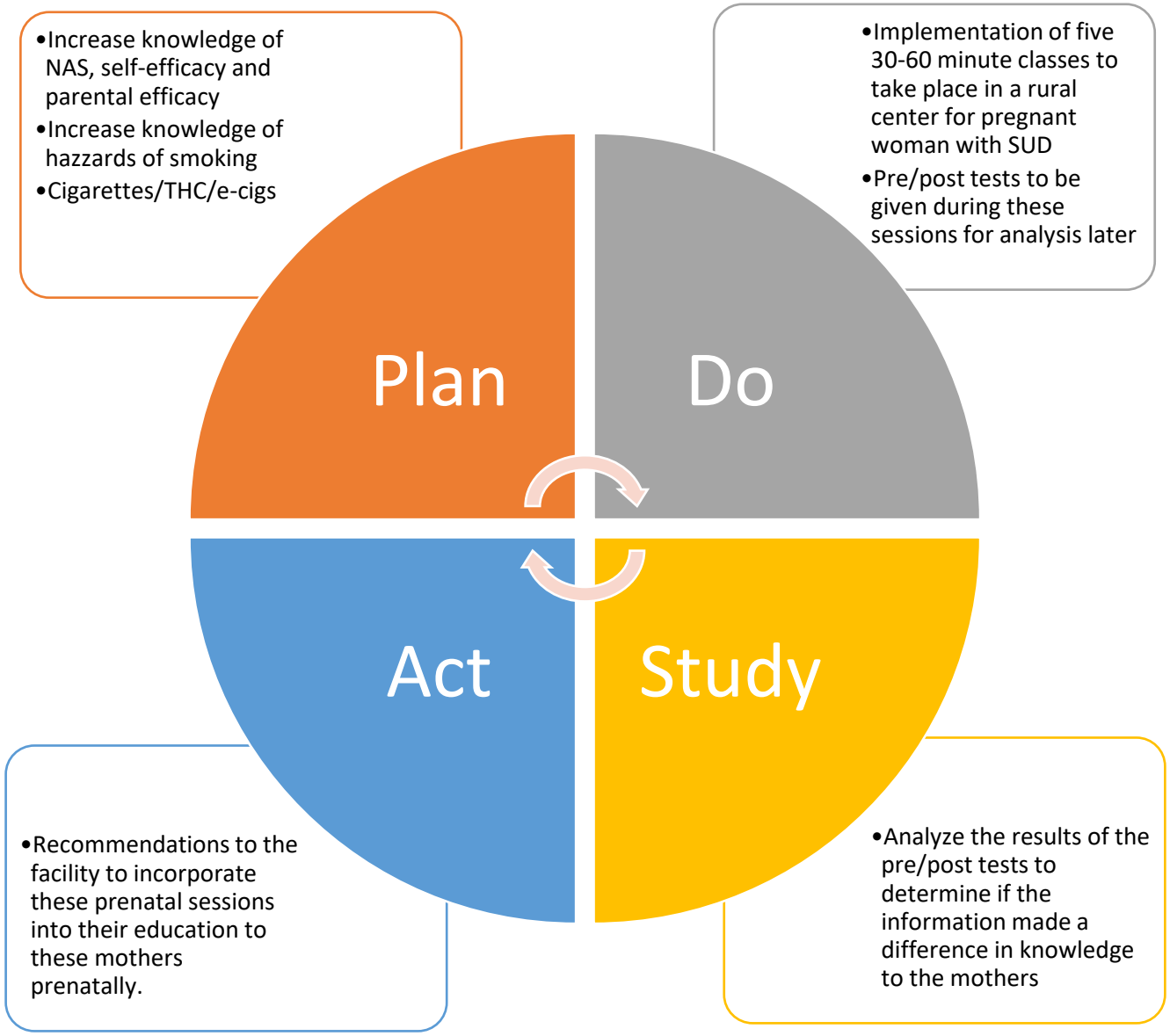
Figure 3

Number of Participants Living Children



Appendix A

PDSA Framework



Appendix B

Parental Efficacy Session

Parental Efficacy Session

1. Pose the open-ended question to the group: What makes a good parent? Responses will be written on a large post-it for discussion.
2. Discuss developmental stages of children using Eric Erickson's stages of psychosocial development (Leifer, 2019 p.371).
3. Pose the following questions for discussion to the group which will stimulate conversation on parenting skills in conjunction with developmentally appropriateness of the child. These are fictional scenarios.
    a. A mother has three children. Their ages are a newborn, which she has custody of, a three-year-old and a nine-year-old, which she does not have in her care currently. The nine-year-old has started acting out at school and a bully type of behavior has been brought to your attention. How would you handle this child's behavior?
    b. A mother is staying in a treatment facility for her recovery. Her ten-year-old poses the question about sobriety. The question is why do you get to keep your baby with you and not me? How could you answer this question knowing the child's developmental age?
4. After stating that parenting can be stressful, open a discussion on ways to make parenting enjoyable.
5. Discuss local support systems for parents that will have a positive influence on their recovery.

Appendix C

Self-efficacy Session

Self-efficacy Session

1. Pose the question to the group. What does the phrase “self-care” mean to you? The responses will be written down on a large post-it.
2. Post the question to the group. Why is “self-care” important? Self-care plays an essential role in managing chronic illnesses and crisis situations
3. Pose the question to the group. Here at the center your activities are very structured. Upon leaving the facility what are some ways that we can maintain our “self-care” in a productive and healing manner?
4. What barriers do you see preventing you from achieving “self-care”? Discuss practical solutions to these barriers with the group and including the group.

Appendix D

Compassion Fatigue Session

Compassion Fatigue

1. Pose the question. Have you ever heard the term “compassion fatigue”? and if so, what does it mean?
2. Discuss the physical signs and symptoms of compassion fatigue with the group. Stressing the importance of being able to identify the signs so that early intervention can be obtained
3. Discuss the negative implications if compassion fatigue is not identified early. Some of these implications will include the risks for shaken baby syndrome and child abuse.
4. Discuss positive ways to cope with compassion fatigue when you or someone you know recognizes it in yourself.

Appendix E

Time Management Session

Time management Session

During this session, the group will be posed with fictional case scenarios involving several normal day activities and be posed with how to accomplish all these activities in a day and then during a week.

1. The first scenario is a single parent of two children. The oldest child is five years old and in elementary school. The younger child is nine months old. Mother works full time at a local restaurant.

   Daily activity items include:

   1. Work 10:00am-6:00pm at a local restaurant
   2. Packing meals for children and herself
   3. Checking in with “sponsor”

2. The second scenario involves the same client, however now discussion of weekly activities requires planning ahead to meet the client’s obligations.

   a. Sobriety meeting once a week
   b. Follow up appointment with sponsor once a week
   c. Work schedule 5 days a week
   d. Attendance at place of worship once a week
   e. Soccer game for five-year-old -game once a week and practice twice a week

Appendix F

Smoking Hazards Session

Smoking Hazards Session

During this session, an open discussion on the hazards of cigarettes, e-cigarettes and THC was conducted. A gallery walk exercise will be implemented during this session. Three large post-it's were posted on the walls. One post-it with "cigarettes" written on it, the second with "E-cigs," and the third with THC. The clients will then be asked to write down all the information they know about what these items are and the effects on the body and also that of their unborn child and others in the household. At the end of a three to five-minute period the groups will rotate clockwise and fill in any additional information that they may recall. A third rotation will be made till each group has had the opportunity to add their information. At the conclusion all the post-it papers will be reviewed and discussed as a group.

Appendix G

Parenting Sense of Competence Scale

Last four digits of your cell phone number_____

Parenting Sense of Competence Scale

(Gibaud-Wallston & Wandersman, 1978)

Please rate the extent to which you agree or disagree with each of the following statements.

Strongly Disagree	Somewhat Disagree	Disagree	Agree	Somewhat Agree	Strongly Agree
1	2	3	4	5	6

1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired. 1 2 3 4 5 6
2. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age. 1 2 3 4 5 6
3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot. 1 2 3 4 5 6
4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated. 1 2 3 4 5 6
5. My mother was better prepared to be a good mother than I am. 1 2 3 4 5 6
6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent. 1 2 3 4 5 6
7. Being a parent is manageable, and any problems are easily solved. 1 2 3 4 5 6
8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one. 1 2 3 4 5 6
9. Sometimes I feel like I'm not getting anything done. 1 2 3 4 5
10. I meet by own personal expectations for expertise in caring for my child. 1 2 3 4 5 6
11. If anyone can find the answer to what is troubling my child, I am the one. 1 2 3 4 5 6
12. My talents and interests are in other areas, not being a parent. 1 2 3 4 5 6
13. Considering how long I've been a mother, I feel thoroughly familiar with this role. 1 2 3 4 5 6
14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent. 1 2 3 4 5 6
15. I honestly believe I have all the skills necessary to be a good mother to my child. 1 2 3 4 5 6
16. Being a parent makes me tense and anxious. 1 2 3 4 5 6
17. Being a good mother is a reward in itself. 1 2 3 4 5 6

Appendix H

Self-Care Pre/posttest

Last four digits of your cell phone number_____

Answer the following questions with a response ranging from one to five. Please circle your response.

5= Strongly agree

4=Agree

3=Neutral

2=Disagree

1=Strongly Disagree

1. How likely am I to identify what a self-care task would include? 1 2 3 4 5
2. How likely is it that I can identify the negative results that can result from the inability to meet “self-care” needs? 1 2 3 4 5
3. How likely am I to engage in activities that promote “self-care”? 1 2 3 4 5
4. How likely am I to be able to identify potential barriers and intervene before “self-efficacy” is affected? 1 2 3 4 5
5. How likely am I to try new things to enhance self-efficacy? 1 2 3 4 5

Appendix I

Compassion Fatigue Pre/posttest

Last four digits of your cell phone number_____

Answer the following questions with a response ranging from one to five. Please circle your response.

5= Strongly agree

4=Agree

3=Neutral

2=Disagree

1=Strongly Disagree

1. I can tell someone what "compassion fatigue" means. 1 2 3 4 5
2. I can identify at least three physical signs of compassion fatigue. 1 2 3 4 5
3. I know how to relax when I am extremely stressed. 1 2 3 4 5
4. I can identify when I am stressed and may need help caring for my infant. 1 2 3 4 5
5. How likely am I to be able to recognize positive ways to combat compassion fatigue? 1 2 3 4 5

Appendix J

Time Management Pre/posttest

Last four digits of your cell phone number_____

Answer the following questions with a response ranging from one to five. Please circle your response.

5= Strongly agree

4=Agree

3=Neutral

2=Disagree

1=Strongly Disagree

1. I realize how time management can affect my overall wellbeing. 1 2 3 4 5
2. I am likely to implement time management skills into my road to recovery. 1 2 3 4 5
3. How likely am I to identify positive implications of time management? 1 2 3 4 5
4. How likely am I to be able to prioritize activities in “real life” so that I can provide time for myself and my children? 1 2 3 4 5
5. How likely am I to be able to identify the effects of shaken baby syndrome? 1 2 3 4 5

Appendix K

Smoking Pre/posttest

Last four digits of your cell phone number_____

Answer the following questions with a response ranging from one to five. Please circle your response.

5= Strongly agree

4=Agree

3=Neutral

2=Disagree

1=Strongly Disagree

1. I can identify smoking substances that cross the placenta while pregnant? 1 2 3 4 5
2. I can recognize if these substances can cause long term medical issues with my child? 1 2 3 4 5
3. How likely am I to recognize that tobacco smoking is a leading cause of preventable morbidity and mortality among infants? 1 2 3 4 5
4. How likely am I to recognize that smoking regardless of content can result in an infant with low birth weight and can contribute to sudden infant death syndrome? 1 2 3 4 5
5. How likely am I able to recognize that smoking contributes to a reduction in brain function of your infant? 1 2 3 4 5

Appendix L

Center Flier

Appendix M

Demographic Sheet

Please circle or fill in your response to each question.

Last 4 numbers of your cell phone _____

1. What is your age?
    a. 18-22
    b. 23-27
    c. 28-32
    d. 33-37
    e. Greater than 38 years old
2. What is the highest level of education that you have obtained?
    a. Less than high school graduate
    b. High school graduate
    c. GED
    d. Some college
    e. College graduate
3. What county do you live in? _____
4. How many living children do you have? _____
5. What is the gestational age of your pregnancy?
    a. 1-8 weeks
    b. 9-16 weeks
    c. 17-24 weeks
    d. 25-32 weeks
    e. 32-40 weeks
    f. Recently delivered
6. Do you smoke? Yes/no

Appendix N

Letter of Support

From:
Woman's Renaissance Center
Seven Counties Services Inc.
231 Washington St
Shelbyville, KY 40065
502-437-5066
https://sevencounties.org/src/

To:

University of Louisville School of Nursing
2301 S. Third Street, Louisville, KY 40292

TO Whom it may concern

This is to verify an agreement between the Seven Counties Woman's Renaissance Center, and Tracey Brink, APRN.

We give her permission to implement her DNP project at this site without supervision. We will be available to her on a consultation basis, and this has been agreed upon. She will be implementing prenatal education to our clients including but not limited to compassion fatigue, hazards of smoking, parenting skills and emotional self-care. There will be no cost to the center or the clients. All HIPPA regulations will be maintained.

This project is a quality improvement project. It will be submitted to the University of Louisville IRB for review and is exempt from Human Subject research.

This agreement is binding from September 1,2021 thru July 4, 2021.

Morgan Coy, LCADC
Unit Manager I
Women's Renaissance Center
231 Washington St., Shelbyville, KY 40065
p: (502) 437-5066 or (502) 437-5242
c: (812) 569-7342
f: (502) 437-5217
mcoy@sevencounties.org
SevenCounties.org | Facebook | Twitter

Appendix O

Project Site IRB Approval Letter

University of Louisville

Human Subjects Protection Program Office
300 East Market Street, Suite 380
Louisville, Ky 40202
P: 502. 852.5188 E: hsppofc@louisville.edu

DATE:	January 03, 2022
TO:	Lela A Baker
FROM:	The University of Louisville Institutional Review Board
IRB NUMBER:	21.0970
STUDY TITLE:	**Development of a project to improve education at a rural medically assisted treatment center focused on neonatal abstinence syndrome and parenting skills**
REFERENCE #:	737912
DATE OF REVIEW:	01/03/2022
CONTACT FOR QUESTIONS:	Sherry Block 852-2163 slbloc04@louisville.edu

The IRB Chair/Vice-Chair (or An IRB member) has reviewed your submission. The project described does not meet the "Common Rule" definition of human subjects' research. The IRB has classified this project as Non-Human Subjects Research (NHSR). The project can proceed.

This submission has been determined to be quality improvement, and not human subjects research, based on the goal(s) stated in the protocol.

Institutional policies and guidelines on participant privacy must be followed. If you are using protected health information, the HIPAA Privacy rules still apply.

Any changes to this project or the focus of the investigation must be submitted to the IRB to ensure that the IRB determination above still applies.

Amendments for personnel changes or study closures are not required.

Thank you,

Paula Radmacher, Ph.D., Vice Chair,
Biomedical Institutional Review Board
PR/slb

We value your feedback; let us know how we are doing: https://www.surveymonkey.com/r/CCLHXRP