EVALUATING PROVIDERS' PERCEPTIONS ON PRECONCEPTION CARE FOR WOMEN WITH SUD

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REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Assistant Dean for MSN and DNP Studies, on behalf of the program; we verify that this is the final, approved version of the student's DNP Project including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Corinna Hughes, Student
Dr. Julianne Ossege, Advisor
Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing Practice at the University of Kentucky

By
Corinna Hughes
Lexington, Kentucky
2020
Abstract

**Background:** Substance use disorders (SUDs) has become an epidemic. Women of reproductive age with SUDs have particularly complex healthcare needs including an increased risk of having an unintended pregnancy and associated sequela of negative birth outcomes (NBO). Little is known about how medication assisted treatment (MAT) providers are adequately addressing their unique needs. Identifying provider barriers and tools to address the reproductive needs of women with SUDs can optimize their health outcomes and prevent NBOs.

**Purpose:** The purpose of this study was to evaluate MAT Nurse Practitioners’ (NPs) knowledge and perceptions of providing preconception care to women with SUDs.

**Methods:** This study was a one-group pre/post intervention design to evaluate the knowledge, perceptions, and barriers of MAT providers. The survey was administered before and after completing an educational module on providing preconception care to women with SUDs. A convenience sample of Kentucky MAT NPs was obtained through electronic and mailed recruitment letters.

**Results:** There was an increase in knowledge in identifying the key features of the One Key Question™ preconception care decision making tool after the module. Providers’ self-reported intentions, attitudes, perceived control, and perceived peers’ expectations to provide preconception care to women with SUDs were high in the pre- and post-survey. Providers reported a neutral response related to the expectation of providing preconception care and reported that there is little to no social pressure to provide preconception care.

**Discussion:** The lack of social pressure, minimal expectations, and barriers in providing preconception care presents an obstacle to the reproductive care of women with SUDs.
EVALUATING PROVIDERS’ PERCEPTIONS ON PRECONCEPTION CARE FOR WOMEN WITH SUD

Increasing preconception care awareness, resources and services in this marginalized population has the potential to impact the health of women with SUD.
Acknowledgements

I am thankful for my family, friends, and classmates that have acted as a rainbow in my cloud throughout this program. Thank you to my advisor and committee chair Julianne Ossege for consistently motivating me and helping me to broaden my approach and soar high. To Kristin Ashford for your constant display of support, mentorship, and for inviting me to be a part of a project that existed within my passion for women’s’ health. To Hartley Feld for your acceptance of many meetings, feedback, and most importantly for your excitement about a project to better the care of marginalized women. I could not have asked for better committee members that have helped me pursue this study. Thank you to Holly Dye from the Beyond Birth Comprehensive Recovery Center for your support and enthusiasm toward the creation of the module and project completion. To Amanda Wiggins for the statistical support throughout this project, your patience is a virtue.
Dedication

This DNP Project is dedicated to my Mom for her love that has encouraged me and for her triumph over her own obstacles that enthused my passion for those that suffer from strong holds in their life. Thank you, Momma, for encouraging me and reminding me that God has placed purpose in all lives bigger than one could ever imagine. Additionally, I would also like to dedicate this project to Mothers’ who have a substance use strong hold in their life---please know that you are loved and cared for by many.
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Introduction

Women with substance use disorders (SUDs) have two to three times the rate of unintended pregnancies compared to the general population (Heil et al., 2011). Unintended births and high-risk behaviors, including substance use, are associated with negative birth outcomes. Epidemic levels of substance use have been reported throughout the US and Kentucky continues to outpace the nation (CDC, 2019). Kentucky had the 6th highest age-adjusted drug overdose death rate in the nation at 33.5 deaths per 100,000 population compared to 19.8 per 100,000 in the U.S. (Hedegaard, Warner, & Minino, 2017). There has been a 24-fold increase in the rate of babies born with neonatal abstinence syndrome (NAS) over the past decade and other negative birth outcomes (Kentucky Department for Public Health, 2018).

Substance use disorders involve various symptom patterns that result from the continued use of a substance (alcohol; hallucinogens; opioids; sedatives, hypnotics; stimulants; or etc.) that is taken despite subsequent problems (American Psychiatric Association, 2013; Mclellan, A. T., 2017). Substance use during the preconception period is linked to an increased risk of still births, neurological complications, increased intrauterine growth restriction, and further negative birth outcomes (Floyd et al., 2008). Neonatal abstinence syndrome (NAS) is a serious health issue caused by exposure to primarily illicit substances in utero. The syndrome is a collection of neonatal psychomotor behaviors consistent with withdrawal including tremors, irritability, and seizures. (Kocherlakota, 2014). NAS is caused by the mother’s use of opiates, narcotics, or several other non-narcotic drugs during pregnancy (alcohol, barbiturates, chlordiazepoxide, diazepam, and hydroxyzine) (Hudak & Tan, 2012). Even the continued use of buprenorphine and methadone (medication assisted treatments) can increase the incidence of NAS. It is estimated that NAS extends the stay of infants up to 15.9 days and has an overall national hospitalization
cost of $572.7 million (Strahan, et al., 2019). Nationally and in Kentucky, about 80% of these infants are covered by Medicaid ($477.0 million) (KDPH, 2018; Strahan, et al., 2019). In Kentucky there are over almost one hundred new cases of NAS each month (KDPH, 2018).

The adverse effects of prenatal substance use and the growing opioid epidemic elicit the need for more innovative strategies to empower women with SUDs to modify behaviors to optimize their health and therefore that of their future pregnancies. Medication Assisted Treatment (MAT) providers have the most consistent contact with this vulnerable population and little is known about their ability to attend to the preconception and reproductive health needs of these patients. Providers with an intent to practice medication-assisted treatment (MAT) are required to apply for a waiver to prescribe buprenorphine under the Drug Addiction Treatment Act of 2000 (DATA 2000). The educational training to receive the waiver includes information about caring for pregnant and postpartum women; however, preconception care and reproductive health is not covered or prioritized.

**Preconception care in Practice**

Preconception care has been widely endorsed to optimize maternal and child health outcomes. Preconception care offers an opportunity to discuss risk factors and interventions to potentially decrease adverse pregnancy outcomes and improve women’s health (Barfield & Warner, 2012). Healthy People 2020 has advised preconception care as a strategy for preventing adverse birth outcomes and in improving women’s overall health (Office of Disease Prevention and Health Promotion, 2018). The CDC, American Academy of Family Physicians (AAFP), American College of Obstetrics and Gynecology (ACOG) and various other organizations have recommended preconception care to all women of child bearing age to avoid adverse birth outcomes and to promote favorable behaviors prior to conception (ACOG, 2019; CDC, 2018;
Wilkes, 2016). Providers have acknowledged that preconception care has the ability to improve reproductive health and pregnancy outcomes (Callegari, Ma, & Schwarz, 2015; Fuehrer, Buckler, Bowman, Gregory, & McDaniel, 2015; Hussein, Kai, & Qureshi, 2016). However, in spite of the consensus, reproductive health planning has not become part of practice settings nationally (Akers, Gold, Borrero, Santucci, & Schwarz, 2010; Bell, Rao, & Stulberg, 2015; Frayne et al., 2016; Frey & Files, 2006; Mazza & Chapman, 2010).

Preconception care is also vital to the prevention of adverse birth outcomes among women with SUDs. The American Society of Addiction Medicine has noted the importance of preconception care specifically in the management of women with SUD (ASAM, 2017). It is necessary that women with SUDs and of child bearing age be assessed and guided through preconception care counseling to optimize their health and that of their future pregnancies. Understanding providers’ perceptions and knowledge of preconception care among women with substance use disorders (SUDs) could allow for more applicable targeting of interventions to support the health of women with SUDs.

The Gap in Preconception Care

Despite the need for preconception care, which has been demonstrated in literature dating back to 1979, there is a lack of screening among women with SUDs by providers’ who provide medication assisted therapy (Klaman et al., 2019; Wright., 2019). A national survey identified that only a small percentage of visits made by women of reproductive age included preconception or contraceptive services (Bello., et al., 2015). These services are estimated to be even lower in women with SUDs by the increasing trends of drug related adverse birth outcomes, rates of unintended births, and the documented unmet need of preconception care. Therefore, action is needed to engage and inform women about their reproductive health. Most available
services are dedicated towards the pharmaceutical treatment of women’s’ SUD due the growing opioid epidemic. Consequently, while providers’ being trained in drug addiction treatment are increasing, the comprehensive approach of women’s need for preconception care is not being addressed. Thus, more research is warranted to better understand and examine the perceptions of providers regarding providing preconception care to their clients.

Providers have identified a knowledge deficit surrounding preconception counseling, a lack of time, competing priorities, and various health system barriers as reasons why counseling services are not initiated (Akers, Gold, Borrero, Santucci, & Schwarz, 2010; M'Hamdi H, van Voorst, Pinxten, Hilhorst, & Steegers, 2017). As a result of various barriers, including a lack of provider knowledge, several organizations have generated preconception care outlines to be used in clinic. Through examining providers’ perceptions and knowledge regarding preconception care van Voorst et al. (2015) found that 90 % of providers who did not use a reproductive tool would be willing to use one in the future. Ekstrand Ragnar, et al (2018) and Bello, et al (2013) conducted studies that demonstrated that reproductive tools and training aimed at health care providers were helpful and changed their delivery of preconception care. Due to the gap in preconception care education, providers have expressed a desire for more resources to facilitate preconception care counseling (Schwarz et al., 2012). Two national websites have produced preconception care support including a comprehensive clinical resource guide on preconception health (www.beforeandbeyond.org) for providers and a consumer-focused preconception health website (showyourlovetoday.com). The consumer-based website was launched in 2016 by National Preconception Health and Health Care (PCHHC). Although there are extensive formats for providers to learn about preconception health an available tool to be used by MAT providers has not been emphasized. The current required American Psychiatric Nurses Association (2017)
educational training for the treatment of SUDs does not include information pertinent to the preconception care of women. The information pertaining to women specifically focuses on the treatment of the SUD during the pregnancy and postpartum periods---excluding the preconception period. Due to the limited information available about SUDs and preconception care more advanced educational material about preconception care within substance use disorder treatment plans is warranted. To focus on the upstream determinants of health a module was created to fill the identified gaps in the current MAT training. An educational module on preconception care in MAT practices and MAT preconception care screenings could help to alleviate unintended births, incidences of NAS, and give women an opportunity to make better decisions.

**Purpose**

The purpose of this study was to evaluate DATA waived Nurse Practitioners’ knowledge, perceptions, and barriers to providing preconception care to women with SUDs before and after the use of an evidence-based preconception care online module. The specific aims of the project were to:

1. Evaluate providers’ knowledge of preconception care for women with SUDs before and after the completion of an online training module
2. Evaluate a change in the provider’s intentions, subjective norms, attitudes, and perceived control about preconception care in women with SUDs
3. Identify provider reported barriers to providing preconception care to women with substance use disorders before the online training module.
Theoretical Framework

The theoretical framework that guided this study was the Theory of Planned Behavior (TPB). The TPB predicts an individuals’ intention to engage in an action. The TPB is characterized as a motivational theory that attempts to understand an individual’s motivation to perform a behavior or action. In this study, there was an attempt to understand providers’ intention to counsel women with SUDs on preconception care.

Three beliefs in the theory determine intention and subsequently lead to behavior change: attitudes toward the behavior (behavioral beliefs), social norms regarding the behavior (normative beliefs), and perception of control over the behavior (control beliefs) (Ajzen, 1991). Using Ajzen’s TPB, this study will investigate factors influencing providers’ initiation of preconception care to women with SUDs. The understanding of providers’ intentions can help identify gaps which may affect providers’ likelihood of providing preconception care in women with SUDs. The survey questionnaire (see Appendix A) measures providers’ intention by assessing these concepts.

Methods

Study Design

The design of this study was a quasi-experimental pre/post survey interventional study. The study evaluated the knowledge, barriers, attitudes, subjective norms, behavioral control, and intentions of providers regarding the preconception care of women with SUDs before and after completing an online preconception care module.

Sample

The population for this study were nurse practitioners in Kentucky. The study population included NPs practicing in Kentucky who were members of the Kentucky Coalition of Nurse
Practitioners & Nurse-Midwives (KCNPNM) and who had subscribed to the listserv. In addition, the study included NPs who agreed to publish their name and clinic address on the SAMHSA medication assisted treatment provider data base. Inclusion criteria included any participant with an active Drug Addiction Treatment Act (DATA) of 2000 waiver, who provided care to women 18 to 40 years of age with a substance use disorder, and who were able to read and write in English.

Potential participants were accessed via the state professional organization’s listserv and via mailed letters. The first 10 providers to complete the entire module and survey were awarded with a $20 gift card incentive.

The KCNPNM is a professional organization that serves Kentucky by assisting nurse practitioners in educational and legislative pursuits toward a better healthcare practice environment. The organization consists of over 2000 NPs and nurse midwives who strive to provide accessible and quality care to Kentucky. The PI is a student member of the organization. The Substance Abuse and Mental Health Services Administration is an organization that serves the nation in substance abuse and mental health treatment services. The organization keeps the contact information for each provider in the nation that provides MAT services. There were 506 total DATA waived NPs in KY on the SAMSHA listserv, with 272 DATA waived NPs providing their clinic addresses to the public.

**Stakeholder**

The Beyond Birth Comprehensive Recovery Center is a comprehensive outpatient addiction treatment facility for postpartum and parenting women. The clinic received the Rita and Alex Hillman Innovations in Care award to increase access and improve the health outcomes of pregnant and parenting women with opioid dependence, as well as their infants and families.
Through the award a continuing educational module was developed to address the care of women with SUDs. Therefore, the Beyond Birth Comprehensive Recovery Center were sphere leaders in the direction of this study. As current providers in reproductive health and addiction medicine the clinic served as a resource for the planning and implementation of the module. Following the completion of the DNP project, the presented module will become a part of a larger web-based educational module for continuing education created by the Beyond Birth Comprehensive Recovery Center.

**Barriers & Facilitators**

The disseminated online educational module capitalizes on providers’ efforts toward additional knowledge and of their interest in the health of women with SUDs. Various factors about the project posed several facilitators and barriers. Facilitators included: 1. A module led by evidence-based research and leading organizations’ recommendations, 2. Established partnership with the Beyond Birth Comprehensive Recovery Center in sculpting an educational module, 3. An onsite Media Depot that provided media and technology support in the creation of module, 4. Existing personnel, space, supplies and equipment (computers) for the study, 5. The use of Qualtrics for a secure web-based application for building and managing online surveys and databases.

Barriers to the implementation of the project included: 1. The KCNPNM listserv requiring a membership to the organization to access the list serv, 3. NPs potential to feel insecure in completing the module and survey if they do not feel confident in providing preconception care, 4. The amount of time required for the providers to complete the module and survey, 5. The potential for survey fatigue, 6. The survey data could be vulnerable to hackers during electronic data collection.
Features of the Online Education Module

*Educational Objectives:* The goal of the module was to create an additional resource for MAT providers to promote and initiate the reproductive health care of women with SUDs. The topics discussed included: the importance of preconception care among women with SUDs, how to integrate reproductive health planning into routine practices, the One Key Question reproductive health shared decision-making tool, and lastly point of care resources to support evidence based reproductive health planning.

*Educational methods:* The module was developed as part of the Beyond Birth Comprehensive Recovery Center's Rita and Alex Hillman Innovations in Care award to increase access and improve health outcomes in pregnant and parenting women with opioid dependence. The preconception care module was developed by the principal investigator using the American Society of Addiction Medicine (ASAM), Centers for Disease Control and Prevention (CDC) and American College of Obstetrics and Gynecology (ACOG) recommendations toward the preconception care among women of reproductive age. The module was developed in collaboration with the University of Kentucky Faculty Media Depot studio. The investigator created a script that accompanied the visual presentation of the module. The module had an estimated time length of 16 minutes. The online module was embedded into the survey questionnaire through Qualtrics.

*Procedures*

Prior to the survey administration a cover letter was presented through an email and/or mailed letter that asked for participation from providers treating women with substance use disorders (SUD). The cover letter outlined that participation was voluntary, the participant was able to quit the survey at any time, and the responses to the surveys were anonymous.
Completion of the online questionnaire was considered informed consent. The module and survey were dispersed through a web link and/or QR code attached to the cover letter.

Permission was obtained from the KCNPNM to post the cover letter containing a module/survey web link on their listserv. The PI posted the initial recruitment email to the KCNPNM listserv. After two weeks, the PI sent a reminder email to KCNPNM listserv. After another two weeks, The PI sent a final reminder email to KCNPNM for completion of the module and surveys. Additionally, the PI sent mailed cover letters containing a module/survey web link and QR bar code to Kentucky DATA waived nurse practitioners who agreed to publish their name and clinic address on the Substance Abuse and Mental Health Services Administration (SAMSHA) medication assisted treatment (MAT) provider public data domain. Follow up mailed letters were not sent.

Measurement

The survey incorporated Ajzen's (1991) theoretical framework of the Theory of Planned Behavior (TPB) to investigate the practices of providers. The questionnaire was adapted with permission from an existing survey used in a study examining primary care provider factors associated with intentions in offering smoking cessation education/treatment (Okoli, Otachi, Kaewbua, Woods, and Robertson, 2017). There were 4-questions used to evaluate providers’ knowledge of preconception care practices among women with SUDs. An open response question to address providers’ barriers to providing preconception care was integrated into the questionnaire. All TPB components (attitudes, social norms, perceived behavioral control and behavioral intentions) were measured on a 7-point Likert scale as recommended by previous studies (Ajzen, 2004). Content validity of the survey tool was conducted by committee members (Julianne Ossege, Kristin Ashford, and Hartley Feld). The pre-test survey included questions
relating to demographics, perceptions, knowledge, and barriers. Following the completion of the module, participants were asked to complete an identical questionnaire. There was a total of 27 questions. The survey was predicted to take about 15 minutes to complete.

Data Collection

The data was collected and stored in Qualtrics with no personal health identifiers (PHI). Responses were automatically uploaded to the password protected Qualtrics account for the project, accessible only by the researchers. The first ten names of those who voluntarily sent contact information (name & email address) through a voluntary submission to a separate survey unconnected to the study survey answers were compensated with an online $20 gift card. The PI then sent out the $20 Visa gift cards to the 10 participants who had supplied voluntary contact information (name and email address). Contact information (name and email address) for receiving the gift card were not be linked to survey responses and were transmitted to an entirely separate database with no connection to the survey data. The PI had access to the supplied voluntary contact information in order to send the gift cards through the supplied email addresses.

Data Analysis

A descriptive statistical analysis using frequencies and percentages were completed to describe the demographic characteristics. Paired sample t-test were used to examine pre-and post-intervention differences on scores for providers’ attitude, subjective norms, behavioral control, and intentions of regarding providing preconception care to women with SUDs. The McNemar test was used to examine the change in pre-and post-scores on knowledge of preconception care. Statistical analysis was completed using IBM SPSS statistical software version 26 with an alpha level of 0.05.
Results

Demographic Characteristics

Eighteen providers took the pre-survey, and twelve providers submitted a post-survey questionnaire for data analysis. Seventeen (94.4%) providers were NPs and 1 (5.5%) was a Certified Nurse Midwife. The majority of the participants (72.2%) had 1-5 years of experience with the other participants’ years of experience ranging from 6-10 (16.7%) and 20 or more (11.1%). Sixteen participants identified as female (88.9%). All of the participants selected White, non-Hispanic as their ethnicity/race. See Table 1 for a full description of the demographic characteristics.

Knowledge Evaluation

To address specific aim one, four knowledge questions were presented addressing the preconception care of women with SUDs. Eleven of the participants answered question one correctly in the pre- and post-survey. Every participant answered question two correctly in the pre-survey and one participant missed the answer in the post-survey. One participant answered question three correctly in the pre-survey and two answer correctly in the post survey. Lastly, five answered question four correctly in the pre-survey and 9 answered correctly in the post-survey.

An evaluation of the percentage of change from an incorrect pre-test answer to a correct post-test answer is presented in Table 6. Question 1 and Question 2 had 91.7% of the participants answer the question correctly in both the pre- and post-tests. Conversely, 87.5% of the participants missed question 3, the identification of the One Key Question (OKQ) in both surveys; only two participants identified the correct answer in the post-test which demonstrates a 12.5% positive change. There was a 100% positive change to the correct answer in Question 4 of
the post-test. Question 4 pertained to the algorithmic options of the OKQ shared decision-making tool.

**Providers’ Intentions, Subjective Norms, Attitudes, and Perceived Control**

**Intentions**

To address specific aim 2, providers’ intentions, subjective norms, attitudes, and perceived control about preconception care were compared between the pre- and post-survey. Regarding providers’ intentions to provide preconception care to women with SUDs, mean scores ranged from 5.56 (SD 2.35) to 6.11 (SD 1.17) on a 7-point Likert scale with 1 being strongly disagree and 7 being strongly agree. No statistically significant change from pre- and post-test answers was found (p=0.302, 0.594, 0.594). See Table 2 for the full analysis of providers’ intentions pre- versus post-survey.

**Subjective Norms**

In relation to the questions about providers’ feelings of being under pressure to provide preconception care to women with SUDs, scores ranged from 2.67 (SD 1.87) to 2.89 (SD 1.89) on a 7-point Likert scale with 1 being strongly disagree and 7 being strongly agree. Regarding the expectation of providers to deliver preconception care to women with substance use disorders scores ranged from 4.33 (SD 2.74) to 4.56 (SD 2.19). When providers were asked their idea of what their peers thought of the importance of providing preconception care to women with SUDs scores ranged from 6.67 (SD 1.00) to 6.33 (SD 1.00). There was not a significant change from pretest to post-test in (see Table 3).

**Attitudes**

Regarding providers’ attitudes of providing preconception care to women with SUDs scores ranged from 6.89 (0.33) to 7.00 (0.00) on a 7-point Likert scale with 1 being “not
beneficial” and 7 being “beneficial”; 5.78 (1.48) to 6.00 (1.12) on a 7-point Likert scale with 1 being “unpleasant for you” and 7 being “pleasant for you; and 5.78 (1.48) to 6.00 (1.12) on a 7-point Likert scale with 1 being “Ineffective” and 7 being “useful”. There were no statistically significant changes in providers’ attitudes of providing preconception care from the pre and post-test data. Providers’ generally thought that providing preconception care to women with SUDs was beneficial, pleasant, and useful (see Table 4).

**Perceived Control**

Regarding providers’ perceived control to provide preconception care to women with SUDs, scores ranged from 4.67 (SD2.40) to 6.11 (SD 0.87) on a 7-point Likert scale with 1 being strongly disagree and 7 being strongly agree. Additionally, providers’ scores increased from a neutral response in question 2 on “Whether I provide preconception care to women with substance use disorder is entirely up to me” in the pre-survey to a “somewhat agree” in the post survey (4.67 to 5.44; \(p=0.228\)). This was not a statistically significant change.

There was a statistically significant change in how providers perceived their ability to provide preconception care. Question 3 on “For me to provide preconception care to women with substance use disorders is…..” had a pre-survey mean of 5.22 (SD1.72) and a post-survey mean of 5.89 (SD0.93) (\(p=0.05\)) on a 7-point Likert scale with 1 being “difficult” and 7 being “easy”.

See Table 5 for the full analysis of providers’ perceived control pre- versus post-test.

**Identified Barriers to Preconception Care**

Specific aim three addressed identifying barriers to preconception care. The survey included a free text option for participants to express the significant barriers they face in providing preconception care to women with SUDs. The eight responses were grouped into three categories, provider factors, organizational support, and patient factors. Of the statements that
elaborated on the provider specific limitations to providing preconception care, one participant stated the care was “…perceived as a lower priority health care focus when there are so many co-morbidities associated with SUD”. In reference to the clinic specific barriers, one participant wrote “The clinic I work for decided they didn’t want to treat this category. I feel confident in providing care but the clinic discharges them if they get pregnant. I feel the clinic itself is the barrier”. Lastly, in reference to barriers relating to the patient, participants wrote “Keeping them accountable for their actions” and “A lot of women only seek help after becoming pregnant” were among the barrier’s participants offered.

Discussion

The study aims were to gain a better understanding of DATA waived providers’ knowledge, perceptions and barriers of providing preconception care to women with SUDs. In addition, through the use of a preconception care online module changes in providers’ knowledge and behavioral intentions were evaluated. Currently literature suggests that preconception care influences the actions, knowledge and confidence of women surrounding their reproductive health (Stern et al., 2013; Mittal et al., 2014; Velasquez ez et al., 2017). Specifically, for women with SUDs, preconception care is a critical part of their routine care. However, despite the prominent need for preconception care, the literature shows that providers are not addressing the reproductive care needs of women with SUDs (Ecker et al., 2019; Klaman et al., 2019). This study is among the limited number of analyses to assess DATA waived or MAT providers’ knowledge, perceptions, and barriers to preconception care as a way to understand how we can improve the health of women and children in the future.
Knowledge of Preconception Care

Providers’ knowledge of preconception care was consistent with what is demonstrated in the literature. The knowledge and utilization of preconception care by providers is limited (Goossens, et al., 2018). Providers in this study generally had an idea of the purpose and importance of the care. There were no significant differences in the pre- and post-survey. The providers were able to answer most questions correctly before and after the module; however, were unable to identify the correct delivery methodology. In the literature it is emphasized that among MAT providers there is an awareness of the importance of preconception care, yet a decreased awareness of specific tools or guides to carry out preconception care (Stephenson et al., 2014; M’hamdi, et al., 2017). As women represent the fastest-growing demographic of opioid related deaths (Salmond, et al., 2019) and the rates of NAS increase, the attention in Kentucky and nationally has focused on the antepartum and postpartum period of women’s reproductive timeline. There are limited guidelines and tools present that clearly identify the importance of incorporating reproductive health into the comprehensive healthcare management of women with SUDs.

Providers’ knowledge did not drastically change for either of the four questions. The majority of the providers answered the general preconception care questions (Q1-Q2) correctly, which left limited room for improvement in the post test. The exhibited increase in provider knowledge demonstrated that the module has the potential to convey how to provide preconception care using the One Key Question (OKQ) tool. In addition, the One Key Question topics highlighted in the post survey suggest that providers were able to improve their understanding of how to use the OKQ tool. Therefore, potential was shown that the module could be incorporated into DATA waived provider’s education to learn about the use of a
preconception care shared decision tool in their daily practices. The main benefit of using the OKQ tool is to raise the topic of fertility awareness for discussion in environments where it has been an afterthought. The One Key Question is: “Would you like to become pregnant in the next year?” (Allen, et al., 2017). The incorporation of the OKQ tool into practice has demonstrated higher rates of provider counseling about contraception options and been found to be helpful in facilitating reproductive plan communication (Baldwin, et al., 2018; Stulberg, et al., 2019).

**Perceptions of the Preconception Care in Women with SUDs**

The Theory of Planned Behavior is a motivational theory that attempts to understand the motivation that underscores a behavior or action. The associated beliefs in the theory determine intention and subsequently behavior. The major associated beliefs outlined by Ajzen (1991) are attitudes toward the behavior (behavioral beliefs), social norms regarding the behavior (normative beliefs), and the perception of control over the behavior (control beliefs). Therefore, a deficit in the intentions, attitudes, social norms, and perceived control of MAT providers on providing preconception care to women with SUD, could act as a limitation toward providing the care. Hence, provider education on the importance of preconception care and tools to articulate the service to women with SUDs could serve as a method to reduce the barriers in initiating the care.

The study demonstrated that providers’ intentions, attitude, and perceived control toward initiating preconception care to their patients was favorable. In comparison to the similar medication treatment providers’ perceptions in North Carolina, intentions toward reproductive health services were similar however, a lack of equipment, supplies and trained staff made it difficult to integrate these offerings into the NC program (Klaman, et al., 2019). In addition, results demonstrated that providers felt confident in providing preconception care and found the
care to be easy to provide. However, the reported lack of social pressure and minimal expectations to provide preconception care presents an obstacle to the reproductive care of women with SUDs. Even with a positive self-identified expectation and a heightened understanding of the benefits, there is an external disconnect on the expectations posed on DATA waived providers to initiate a conversation on the pregnancy intentions of women prior to the initiation or continuation of medication-assisted treatment (MAT). One aspect of this external disconnect is the national mandated guidelines by SAMHSA (2015) and ASAM (2015) for MAT providers, which fail to mention preconception care services. The guidelines solely underscore prenatal care and MAT management of pregnant and postpartum patients. It has been shown that very few MAT programs deliver preconception care, providing another barrier to women obtaining this important service (Klaman, et al., 2019). The reproductive health needs of this subset population is essential. With the volume of infants born to HCV-infected mothers increasing (by 68% nationally and 124% in Kentucky) and NAS increasing an opportunity is present to improve the health of women and children affected by SUDs (Koneru, et al., 2016).

**Barriers to providing Preconception Care**

This research is among the first to examine providers’ barriers to preconception care services for reproductive age women enrolled in MAT in KY. Perceived patient influences and a lack of organizational support were emphasized as barriers to providers integrating preconception care services into their practices. A significant barrier was that MAT providers believed that it was out of their scope or a low priority to provide preconception care to women with SUDs. This is a pivotal point on why preconception care services should be mainstreamed into federal guidelines. The care is imperative to women, their children, and the community. The
reproductive health care of women should be prioritized and align with the dramatic increases of negative outcomes that are a result of it not being stressed.

**Limitations**

There were several limitations identified in the design of this study. First, the sample size of the study was small (n=18) creating a limited representation of the findings. Secondly, although two mainstream methods were used to recruit participants (email and mailed letter) there were barriers in collecting email addresses. Third, the post-test survey yielded a lower response rate demonstrating that survey fatigue was likely. As the survey and module were expected to take 30-40 minutes, this was anticipated Another limitation was that the survey findings relied on the self-reporting of providers’ perceptions and knowledge. Direct questions pertaining to the current preconception care practices of providers and how the care is delivered was not surveyed. Lastly, providers’ perceptions and identified barriers of providing preconception care to women with SUDs had few findings in the literature limiting the ability to compare results with other studies.

**Implications for Future Practice**

The overall perceptions and basic insight into the preconception care among women with SUDs remain optimistic. An improvement in the post-test answers relating to the action of providing preconception care with the One Key Question tool was demonstrated. However, the organizational and provider specific barriers identified a continued need for education on preconception care practices in MAT practices. This educational module is needed because it addresses the importance of preconception care and of how to incorporate it into MAT providers’ practices. Onsite preconception care services could help to alleviate disparities in healthcare access among this population. The integration of preconception care would require practice
changes for MAT providers. However, the individual integration of this care may not be enough as the assistance of systemic levels in regards to policy changes and organizational mandates would need to be made. Therefore, a potential step is for state policies to support the integration of preconception care into MAT programs and to support the means of reproductive care services. Additionally, a future implication would be for the federal and American Society for Addiction Medicine (ASAM) guidelines to highlight that women of reproductive age be offered preconception care services along with the mandated test for pregnancy as part of an assessment and diagnosis when seeking MAT.

In light of these findings, future studies to examine MAT providers’ barriers, perceptions and current delivery of preconception care among women with SUDs is indicated. Research is needed to better understand MAT providers’ difficulties in following through with preconception care in their practices. Additionally, future studies might identify women’s perceptions to the access of preconception care services and approaches in MAT programs. Currently, there is little evidence outlining the approaches or use of preconception care tools by medication assisted treatment providers. Yet, there is evidence that signifies the importance of this care to women and children. Confronting the reproductive care needs of women with SUDs would help women to optimize their health status before a pregnancy occurs, potentially leading to better birth outcomes for women, infants, and communities (Kallner and Danielsson, 2016).

**Conclusion**

In the context of the presented limitations, this study contributes to the literature by providing a glance of MAT providers’ barriers, knowledge, and perceptions of providing preconception care to women with SUDs. Increasing the awareness, education, and service of preconception care in this marginalized population has the potential to impact the health of
women with SUDs and their children. If providers incorporated preconception care services then reproductive-aged women with SUDs would have a better opportunity to take control of their health and make their own health-related decisions. However, MAT providers’ lack of social pressure, minimal expectations, and barriers in providing preconception care to the women with SUDs is an opportunity for improvement in this study. An online module utilized by MAT providers has the potential to address the barriers and needed emphasis to the care of women with SUDs. Thus, further MAT provider methods to encourage the practice of preconception care to women with SUDs in their clinics and eliminate barriers is warranted. The initial evidence from this study suggests that the importance of preconception care is known and has the potential to be integrated into MAT providers practices. These initial efforts to enhance the reproductive health of women are encouraging and work in efforts to increase the wellbeing of women with SUDs, their children, and society.
References


intention screening tools: a randomized trial to assess perceived helpfulness with communication about reproductive goals. Contraception and reproductive medicine, 3(1), 21.


Stulberg, D. B., Dahlquist, I. H., Disterhoft, J., Bello, J. K., & Hunter, M. S. (2019). Increase in contraceptive counseling by primary care clinicians after implementation of One Key Question® at an urban community health center. Maternal and child health journal, 23(8), 996-1002.


Table 1. Demographic Characteristics (N=18)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Background</td>
<td>Physician (MD or DO)</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Advanced Practice Registered Nurse (APRN)</td>
<td>94.4%</td>
</tr>
<tr>
<td></td>
<td>Physician Assistant</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Certified Nurse Midwife (CNM)</td>
<td>5.6%</td>
</tr>
<tr>
<td>Years in practice</td>
<td>1-5</td>
<td>72.2%</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>16.7%</td>
</tr>
<tr>
<td></td>
<td>11-20</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>20 or more</td>
<td>11.1%</td>
</tr>
<tr>
<td>Sex assigned at birth</td>
<td>Male</td>
<td>11.1%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>88.9%</td>
</tr>
<tr>
<td>Ethnicity/Race</td>
<td>White, non-Hispanic</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Black, non-Hispanic</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Asian, Pacific Islander</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 2. Comparison of Intentions pre versus post

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. I expect to provide preconception care to women with substance use disorder in the next six months</td>
<td>5.56 (2.35)</td>
<td>6.11 (1.17)</td>
<td>0.302</td>
</tr>
<tr>
<td>Q2. I want to provide preconception care to women with substance use disorder in the next six months</td>
<td>6 (1.32)</td>
<td>6.11 (1.05)</td>
<td>0.594</td>
</tr>
<tr>
<td>Q3. I intend to provide preconception care to women with substance use disorder in the next six months</td>
<td>6.11 (1.27)</td>
<td>6 (1.12)</td>
<td>0.594</td>
</tr>
</tbody>
</table>

(Responses ranged from “1 being ‘strongly disagree’ and 7 being ‘strongly agree’”)
Table 3. Comparison of Subjective Norms pre versus post

<table>
<thead>
<tr>
<th>Q1. I feel under social pressure to provide preconception care to women with substance use disorders.</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.67 (1.87)</td>
<td>2.89 (1.69)</td>
<td>0.559</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2. It is expected of me that I provide preconception care to women with substance use disorders</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.33 (2.74)</td>
<td>4.56 (2.19)</td>
<td>0.729</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q3. Most of my peers think it is important to provide preconception care to women with substance use disorders</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.67 (1.00)</td>
<td>6.33 (1.00)</td>
<td>0.347</td>
<td></td>
</tr>
</tbody>
</table>

(Responses ranged from “1 being ‘strongly disagree’ and 7 being ‘strongly agree’)

Table 4. Comparison of Attitudes pre versus post

<table>
<thead>
<tr>
<th>Q1. How would you rate providing preconception care to women with substance use disorders?</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.89 (0.33)</td>
<td>7.00 (0.00)</td>
<td>0.347</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2. How would you rate providing preconception care to women with substance use disorders?</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.78 (1.48)</td>
<td>6.00 (1.12)</td>
<td>0.559</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q3. How would you rate providing preconception care to women with substance use disorders?</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.89 (0.33)</td>
<td>6.78 (0.67)</td>
<td>0.681</td>
<td></td>
</tr>
</tbody>
</table>

(Responses ranged from Q1. “1 being “not beneficial” and 7 being “beneficial”; Q2. 1 being “unpleasant for you” and 7 being “pleasant for you”; Q3. 1 being “Ineffective” and 7 being “useful”)
Table 5. Comparison of Perceived Control pre versus post

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre Mean (sd)</th>
<th>Post Mean (sd)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. I am confident that I could provide preconception care to women with substance use disorders</td>
<td>6.11 (1.62)</td>
<td>6.33 (0.87)</td>
<td>0.594</td>
</tr>
<tr>
<td>Q2. Whether I provide preconception care to women with substance use disorder is entirely up to me</td>
<td>4.67 (2.40)</td>
<td>5.44 (1.67)</td>
<td>0.228</td>
</tr>
<tr>
<td>Q3. For me to provide preconception care to women with substance use disorders is.....</td>
<td>5.22 (1.72)</td>
<td>5.89 (0.93)</td>
<td>0.05</td>
</tr>
</tbody>
</table>

(Responses ranged from Q1. “1 being ‘strongly disagree’ and 7 being ‘strongly agree’; Q2. 1 being ‘strongly disagree’ and 7 being ‘strongly agree’; Q3. “1 being “difficult” and 7 being “easy”’)

Table 6. Incorrectly to Correctly identified Knowledge questions pre versus post

<table>
<thead>
<tr>
<th>Question</th>
<th>Incorrect Pretest to a Correct Posttest</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Women with substance use disorders have 2 to 3 times the rate of unintended pregnancies compared to the general population. True or False</td>
<td>0%</td>
<td>-</td>
</tr>
<tr>
<td>Q2. The purpose of preconception care for women with SUD is:</td>
<td>0%</td>
<td>-</td>
</tr>
<tr>
<td>Q3. The One Key Question is a shared decision-making tool developed by the Oregon reproductive Foundation and asks which of the following:</td>
<td>12.5%</td>
<td>-</td>
</tr>
<tr>
<td>Q4. The One Key Question is a shared decision-making tool that can have the following responses</td>
<td>100%</td>
<td>0.125</td>
</tr>
</tbody>
</table>
## Survey Instrument

### Survey for Providers

We would like to know some of your thoughts about providing preconception care.

### Intentions

<table>
<thead>
<tr>
<th>Intention</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I expect to provide preconception care to women with substance use disorder in the next six months.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to provide preconception care to women with substance use disorder in the next six months.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intend to provide preconception care to women with substance use disorder in the next six months.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

### Attitude

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>On a scale of 1 being &quot;harmful&quot; and 7 &quot;beneficial&quot; how would you rate providing preconception care to women with substance use disorders?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Harmful</td>
<td>BENEFICIAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On a scale of 1 being &quot;bad&quot; and 7 &quot;good&quot; how would you rate providing preconception care to women with substance use disorders?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Bad</td>
<td>GOOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On a scale of 1 being &quot;unpleasant for you&quot; and 7 &quot;pleasant for you&quot; how would you rate providing preconception care to women with substance use disorders?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>PLEASANT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On a scale of 1 being &quot;worthless&quot; and 7 &quot;useful&quot; how would you rate providing preconception care to women with substance use disorders?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Worthless</td>
<td>USEFUL</td>
<td></td>
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</table>

### Subjective Norms

<table>
<thead>
<tr>
<th>Norm</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is expected of me that I provide preconception care to women with substance use disorders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel under social pressure to provide preconception care to women with substance use disorders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of my peers think it is important to provide preconception care to women with substance use disorders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Perceived Behavioral Control

<table>
<thead>
<tr>
<th>Behavior</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am confident that I could provide preconception care to women with substance use disorders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For me to provide preconception care to women with substance use disorders is.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Difficult</td>
<td>EASY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whether I provide preconception care to women with substance use disorder is entirely up to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Strongly disagree*</td>
<td>STRONGLY AGREE*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Survey for Providers

WE WOULD LIKE TO KNOW SOME OF YOUR THOUGHTS ABOUT PROVIDING PRECONCEPTION CARE.

### Knowledge

Women with substance use disorders have 2 to 3 times the rate of unintended pregnancies compared to the general population.

- [ ] True
- [ ] False

The purpose of preconception care for women with SUD is:

- [ ] A. To provide women of childbearing age in the period before pregnancy an opportunity to improve health-related outcomes for themselves and their future children
- [ ] B. To provide an opportunity to discuss reproductive desires, feelings, goals
- [ ] C. To prevent adverse birth outcomes
- [ ] D. All of the above
- [ ] E. A and B

The One Key Question is a shared decision-making tool developed by the Oregon reproductive Foundation and asks:

- [ ] A. “What are your plans for preventing pregnancy while treating your addiction?”
- [ ] B. “How can I help you with your reproductive health today?”
- [ ] C. “Would you like to become pregnant in the next year?”
- [ ] D. “Do you plan to become pregnant in the next year?”

The One Key Question is a shared decision-making tool that can have the following responses:

- [ ] A. 2 responses: Yes & No
- [ ] B. 3 responses: Yes, No, Maybe
- [ ] C. 4 responses: Yes, No, Ok, Either Way, Unsure
- [ ] D. None

### Barriers to providing preconception care

Please identify actual significant barriers to you providing preconception care to women with substance use disorders. If you have not encountered barriers for a given category, you may skip to the next category.

### Demographics
## Survey for Providers

**We would like to know some of your thoughts about providing preconception care.**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your sex assigned at birth?</td>
<td>Male (1) Female (3)</td>
<td></td>
</tr>
<tr>
<td>What is your ethnicity/race?</td>
<td>White, non-Hispanic (1) Black, non-Hispanic (2) Hispanic (3) Asian, Pacific Islander (4) Other (5)</td>
<td></td>
</tr>
<tr>
<td>What is your disciplinary background or job title? Are you a:</td>
<td>Physician (MD or DO) (1) Advanced Practice Registered Nurse (APRN) (2) Physician Assistant (PA) (3) Certified Nurse Midwife (CNM) (4)</td>
<td></td>
</tr>
<tr>
<td>How many years have you been a provider?</td>
<td>1-5 (1) 6-10 (2) 11-15 (3) 16-20 (4) 20 or more (5)</td>
<td></td>
</tr>
<tr>
<td>Have you obtained a Drug Addiction Treatment Act (DATA) or 2000 waiver to treat opioid addiction?</td>
<td>Yes (1) No (2)</td>
<td></td>
</tr>
<tr>
<td>Do you provide medication assisted treatment to women of reproductive age (18-40 years old)?</td>
<td>Yes (1) No (2)</td>
<td></td>
</tr>
</tbody>
</table>

## Feedback

Do you have any comments about this survey or module? Are there any topics you think should have been included or excluded, or was there anything you liked or did not like about the survey or module?
Appendix B. Recruitment Emailed Cover Letter

Subject line: Preconception Care for Women with SUDs module and survey

Dear Kentucky Coalition of Nurse Practitioners and Nurse-Midwives,

My name is Corinna Hughes, BSN-RN, and I am a member of the UK College of Nursing DNP class of 2020. I am conducting a research project to understand the perspectives of providers treating women with substance use disorders (SUD). Specifically, this project involves the preconception care of women with SUD and involves viewing an online module and completing a pre and post online survey. The project is part of the Beyond Birth Comprehensive Recovery Center’s Rita and Alex Hillman Innovations in Care award to increase access and improve health outcomes in pregnant and parenting women with opioid dependence.

Your participation is voluntary. It requires the completion of a 16-minute online educational module with a pre & post online survey. The survey will take less than 15 minutes. Total time to participate including the online module and the surveys is 30 minutes. Please complete the entire survey, but you may choose to quit the survey at any time. The first 10 participants to complete the online module and surveys will be compensated with a $20 Visa gift card. Providing your email address information for gift card delivery is voluntary and will be sent to a separate database entirely unconnected to the survey responses. I hope to have 100 participants.

Risk for participation in this study are minimal and all efforts will be made to minimize the risks. The potential risks relate to learner discomfort involving the care of women with substance use disorders. However, participants will benefit directly through the knowledge and understanding gained by the online module. Data collected for this study is vulnerable during the electronic data collection, but the data will be encrypted and transferred to a Qualtrics server.

The information gathered will be used only for scientific purposes. Your response to the survey is anonymous which means no names or identifying information will be collected. I will not know that any information you provided came from you, nor whether you participated in the study. If you do not want to participate, simply delete this email without penalty.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project.

Please contact me with any questions,

Corinna Hughes, BSN, RN,

Cshu223@uky.edu
Appendix C. Recruitment Mailed Cover Letter

Dear DATA-Waived Practitioner,

My name is Corinna Hughes, BSN-RN, and I am a member of the UK College of Nursing DNP class of 2020. I am conducting a research project to understand the perspectives of providers treating women with substance use disorders (SUD). Specifically, this project involves the preconception care of women with SUD and involves viewing an online module and completing a pre and post online survey. The project is part of the Beyond Birth Comprehensive Recovery Center’s Rita and Alex Hillman Innovations in Care award to increase access and improve health outcomes in pregnant and parenting women with opioid dependence.

The QR bar code and link below will direct you to the survey and module. Your participation is voluntary. It requires the completion of a 16-minute online educational module with a pre & post online survey. The survey will take less than 15 minutes. Total time to participate including the online module and the surveys is 30 minutes. Please complete the entire survey, but you may choose to quit the survey at any time. The first 10 participants to complete the online module and surveys will be compensated with a $20 Visa gift card. Providing your email address information for gift card delivery is voluntary and will be sent to a separate database entirely unconnected to the survey responses. I hope to have 100 participants. If you have completed the survey from the KCNPDM link, please disregard this invitation.

Risks for participation in this study are minimal and all efforts will be made to minimize the risks. The potential risks relate to learner discomfort involving the care of women with substance use disorders. However, participants will benefit directly through the knowledge and understanding gained by the online module. Data collected for this study is vulnerable during the electronic data collection, but the data will be encrypted and transferred to a Qualtrics server.

The information gathered will be used only for scientific purposes. Your response to the survey is anonymous which means no names or identifying information will be collected. I will not know that any information you provided came from you, or whether you participated in the study. If you do not want to participate, simply delete this email without penalty.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project. Please contact me with any questions,

Corinna Hughes BSN, RN
cshuly223@uky.edu

Survey & Module QR bar code and Link: http://bit.ly/Preconceptioncare