

Reproductive Health Equity:
One Key Question for Women in Recovery

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Abstract

Women in recovery from substance use disorders (SUD) face significant barriers to achieving reproductive well-being (RWB) and disproportionately experience unintended pregnancy. Unintended pregnancy can have serious consequences in this population. Equity-informed approaches promote the integration of reproductive health care (RHC) with recovery programs to improve both access to and quality of RHC. Arizona's largest SUD recovery program, Crossroads, Inc. recently opened an on-site, integrated primary clinic offering RHC. A one-month pilot demonstration of One Key Question® (OKQ), a pregnancy desire screening tool, was implemented with fidelity at Crossroads to identify clients with RHC needs and offer care. IRB exempt status was obtained through Arizona State University. All female-bodied clients aged 18-49 were screened following routine admission assessments. The Institute for Healthcare Improvement Triple Aim model based on Self-Determination Theory and Motivational Interviewing was used to prioritize client autonomy. The client experience of care was measured using an adapted Interpersonal Quality of Family Planning scale. The magnitude of needs and desires were summarized with descriptive statistics. Sixty-three clients were screened with OKQ. Needs were identified in 97% of clients. Of those clients, 98% accepted referrals. Ninety percent of items measuring the client experience of care were rated as "excellent." OKQ provided an efficient structure for person-centered screening and referral conversations to integrate RHC in a large SUD recovery program with excellent care experiences reported by clients.

Keywords: Family planning, contraception, substance use disorder, pregnancy desire, motivational interviewing, reproductive health care

Reproductive Health Equity:

One Key Question for Women in Recovery

Sexual and reproductive health and autonomy have far-reaching implications for the health of individuals, families, and communities. Individuals experience their own reproductive health needs as part of an integrated whole. As such, health-related systems should explore ways to integrate sexual health holistically across a variety of settings (Keller & Sonfield 2019). Applying the concept of “well-being” to reproductive health may be useful to shift away from reproductive health paradigms that have been prescriptive, judgmental, and disempowering. The concept of “well-being” extends beyond the “absence of disease,” and recognizes how people think and feel about their lives, their relationships, their emotions, and their satisfaction with their functioning (CDC, 2019). Reproductive well-being (RWB) is a fundamental component of people’s overall well-being. Significant inequities exist, however, in access to quality reproductive health education, reproductive health-care (RHC), and family planning. Women with substance use disorders (SUDs) face unique barriers to RWB and RHC and experience disproportionate reproductive health burdens. Programs that care for women in recovery may be opportune settings for integrating holistic RHC to improve the RWB of clients.

Problem

Poor RWB and barriers to RHC may have serious consequences for women with SUDs. One consequence is unintended pregnancy (Black & Day, 2016; Heil et al., 2011). Pregnancy in this population presents serious physical and psychosocial risk to the mother including high blood pressure, placental abruption, hemorrhage, postpartum depression, and death (Black & Day, 2016; Gemmill, Kiang, & Alexander, 2018; Singer et al., 2002). The American College of Obstetricians and Gynecologists (ACOG) recommends contraceptive counseling for women with

SUD and increased access to the most effective, nonpermanent methods, known as long-acting reversible contraceptives (LARCs) (ACOG, 2012, 2018). Maternal substance use disorder also presents serious risks to the fetus and newborn, including fetal alcohol spectrum disorders (FASD), fetal growth restriction, prematurity, stillbirth, and newborn drug withdrawal, referred to as neonatal abstinence syndrome (NAS) (ACOG, 2011; Whiteman, et al., 2014).

The incidence of NAS grew nearly fivefold over the past decade and costs an estimated 1.5 billion dollars in hospital charges each year (Patrick & Schiff, 2018). The Center for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP) are calling for improved primary prevention public health responses to FASD and NAS (Ko et al., 2017; Patrick & Schiff, 2018). To decrease the incidence of these high-risk, high-cost pregnancies, the World Health Organization (WHO) encourages contraceptive counseling for women with SUD, with an emphasis on respecting the patient's autonomy (WHO, 2014). Yet, in a systematic review of contraceptive use and method of choice among women with opioid and other substance use disorders Terplan and colleagues found that this population has unmet needs for contraception, especially for the most effective methods (Terplan, Hand, Hutchinson, Salisbury-Afshar, & Heil, 2015).

Background and Significance

Threatening policies have perpetuated disempowerment of women with SUDs. Many well-intentioned programs have contributed to stigma by framing programs in a way that suggests some women are less deserving than others to have full autonomy in their reproductive future by prioritizing population health measurements and neglecting to measure the client experience of care. Unintentional consequences include violations of autonomy and equity and the stigmatization of women with SUDs. Stigma becomes a health problem when it alienates

those who need care from those who have the skill to provide care. To be just and effective, any efforts to reduce the poor health outcomes experienced by women with SUDs, must frame the delivery of services on the fundamental rights of autonomy, dignity, equity, and justice. Measurement principles and tools are not well established to promote these protections.

Population Affected

Women who use drugs are less likely to use contraception and more likely to be ambivalent about pregnancy, with many believing they cannot become pregnant because of their use of substances (Griffith et al., 2017). Often women in recovery suffer with relationship issues including intimate partner violence with reproductive coercion, current or past sexual abuse and trauma, and partner substance use (Griffith et al., 2017). Women can feel embarrassed or ashamed of these problems and may avoid care to avoid discussing these intimate problems with providers. System barriers of cost and access present additional hurdles for women with SUDs (Black & Day, 2016).

Historical treatment of women with SUDs has involved policies that use control efforts based on criminal justice instead of healthcare. This has increased stigma and fear. Threatening policies have further discouraged women with SUDs from seeking both RHC and SUD treatment (Finkelstein, 1994; Howell, Heiser, & Harrington, 1999; Roberts & Nuru-Jeter, 2010; Roberts & Pies, 2011; Schempf & Strobino, 2009; Stone, 2015). Women have avoided healthcare out of fear of incarceration or losing custody of children. Not only are these policies ineffective in reducing substance use, they can erode the therapeutic relationship between provider and patient (ACOG, 2019).

Incidence and Prevalence

Approximately 8% of U.S. individuals have a substance use disorder (SAMHSA, 2014). The gender gap in SUD is narrowing with women now accounting for nearly half of those with SUD (SAMHSA, 2009). Women additionally account for 30-40% of clients in SUD recovery programs (Black & Day, 2016). It is estimated that the rate of unintended pregnancies in the United States is 31%-47%. While these numbers are substantial, that same statistic soars to 86% for women with SUDs (Heil et al., 2011). While approximately half of women with SUDs report using some method of contraception, Terplan et al. (2015) found that only 8% of women with SUDs are using a LARC method. Based on data obtained through a retrospective cohort analysis of claims and encounter data from 47,902 women in Massachusetts, women with substance use disorder are less likely to use prescription contraceptives, especially LARCs. However, they are not less likely to continue using LARCs once prescribed when compared to women without substance use disorders (Griffith, Kumaraswami, Chrysanthopoulou, Mattocks & Clark, 2017).

Current Practice

Women are accepted as clients at the large majority of SUD programs, however, only a minority offer programming designed specifically for women (Terplan, McNamara, & Chisolm, 2012). Black and Day (2016) found that family planning services are rarely co-located within SUD treatment centers. In a qualitative study, Robinowitz and colleagues (2016) explored the acceptability and feasibility of offering family planning education and services in SUD treatment centers and found clients were interested in these services while they were in treatment and preferred to receive these services on-site. According to the U.S. Department of Health & Human Services Substance Abuse and Mental Health Services Administration (SAMHSA), women are more likely to enroll, continue, and thrive in recovery care when programs are

women-centered (SAMHSA, 2009). In 2009, SAMHSA recommended that SUD programs serving women provide

- gynecological care,
- family planning,
- prenatal care,
- educational services about reproductive health,
- education about sexually transmitted diseases,
- sexuality education,
- assertiveness skills training,
- education regarding the effects of alcohol and other drugs on prenatal and child development,
- prenatal education,
- trauma-informed services, and
- strong female role models in terms of both leadership and personal recovery (SAMHSA, 2009).

SAMHSA has prepared treatment improvement protocols to address the specific needs of women and the importance of “one-stop” locations with integrated services (SAMHSA, 2009). Yet, over a decade later, most SUD treatment facilities do not offer on-site RHC (Black & Day, 2016). The standard practice has been to refer women to outside clinics. However, these referral sites vary in their ability to offer a full range of contraceptive methods, same day initiation of contraception, and skill in caring for women with SUD. This current model of care does not adequately address the needs of this population (Black & Day, 2016). Some experts have argued that for women who inject drugs, referral is tantamount to service denial (Nasiri, 2013).

Project Site Internal Evidence

In January 2019, Arizona's largest residential substance use treatment facility, Crossroads, Inc., became one of the few programs in the United States to offer on-site primary care with the opening of a clinic called Crossroads 360 at their largest residential location serving women. The clinic offers integrated care provided by nurse practitioners specializing in mental health, adult and family health, and women's health. Care is available to all residential clients including those at other locations, with shuttle service provided. Clients can continue to access care at the clinic after progressing to outpatient or community status. Members of the community with no other affiliation with Crossroads, Inc. are also welcome to receive care. Therefore, Crossroads is positioned to serve people recovering from SUD, who may be enrolled in other programs that do not offer integrated care.

No data was being collected by Crossroads regarding reproductive intent or use of contraception. The standard admission assessment, developed prior to the clinic opening, did not explicitly address reproductive health. This is not unusual. A Crossroads client shared that in her experience of 18 admissions related to SUD over her lifetime- including jails, hospitals, outpatient treatment centers, and residential treatment centers, "not once" had anyone asked her if she was interested in or needed help with obtaining contraception. She followed with, "And it's so important as I know so many women who have had babies only to have them taken away and that makes recovery so much harder.... there's no pain like that."

The nurse practitioners at Crossroads 360 soon realized that more needed to be done to fully integrate the new reproductive health care services with the residential recovery program to ensure clients could access care in a timely manner if desired.

PICOT Question

This inquiry has led to the clinically relevant PICOT question, “In reproductive aged women with substance use disorders, who would like to prevent/delay pregnancy (P), does a formalized integrated family planning program within a residential substance use treatment center (I), versus the standard practice of referring to an outside clinic (C), affect contraception initiation and the client’s satisfaction with care received (O), during a typical 30-day length of stay of residential substance use disorder treatment (T)?”

Search Strategy

Three databases were searched: CINNAHL, PubMed, and PsychINFO. Key words and Boolean connectors used for SUD were: (*substance use disorders or substance abuse or addiction or recovery or medicated assisted therapy*). These terms were combined with key words: (*pregnancy or contraception or family planning or long-acting reversible contraception*) and (*barrier or access or health disparities*). Articles were restricted to peer reviewed content written in English. Limits of five years, humans, female, adults, and USA were applied.

The PubMed search yielded 332 articles. PsycINFO yielded 233. CINNAHL yielded 243 articles. Articles were narrowed to those most relevant based on reading titles and abstracts. A final yield of 56 relevant articles were further evaluated: 15 from CINNAHL 20 from PsychINFO; and 21 from PubMed. Ten high quality studies were selected based on relevance to PICOT question and evaluation by rapid critical appraisal tools (Appendix A).

Literature Review Key Themes

The ten studies were chosen for their merit to guide program development for fully integrating new family planning services with existing SUD treatment programs. All studies addressed women of reproductive age. Four included a diverse representation of women from

the general population. Six addressed special subpopulations of women including: American Indian women with alcohol use disorders, women with SUD, and women at risk for unintended pregnancy. The settings included a variety of outpatient clinic types: federally qualified health centers, clinics offering medicated assisted therapy, and primary care clinics. Levels of evidence included were I, and IV. The studies with the lower level of evidence were included to provide insight on topics with little published research (Appendix B). Studies described essential elements of services: education, decisional support, the importance of the interpersonal relationship between provider and client, and preferred context/setting for the visit.

Interventions

Removing barriers.

The Contraceptive CHOICE Project is one of the largest prospective cohort studies of women in the United States seeking reversible contraception (Secura, Allsworth, Madden, Mullersman, & Peipert, 2010). Findings from the project indicate that when the barriers of cost, access, and knowledge are removed, women choose the most effective and least user-dependent methods (McNicholas, Madden, Secura, & Peipert, 2014). Not only do women choose these methods (LARCs), they continue using them and are highly satisfied with their contraceptive choice (McNicholas et al., 2014). Goodman and colleagues (2017) performed an analysis of the Contraceptive CHOICE Project database. They concluded that when barriers to cost, access, and knowledge were removed, there was a reduction in black-white racial disparities in teen pregnancy rates. Therefore, it is conceivable that disparities in unintended pregnancy rates would be reduced for women with SUDs using the CHOICE model.

Women were open to a variety of settings/context for family planning counseling, with convenience of the location being key. Black and Day (2016) reported a few integrated

contraception services were making promising strides and when co-located with recovery programs to reduce barriers. Using a naturalistic inquiry, Robinowitz and colleagues (2016) explored the acceptability and feasibility of offering family planning education and services in SUD treatment centers and found that clients were interested in these services while they were in treatment and preferred to receive these services on-site.

Motivational interviewing and tailored counseling.

Tailored education promoting the most effective methods was a major theme of the studies reviewed. Multiple theories and frameworks were used to guide decision-making support. Motivational interviewing emerged as an effective theory-based counseling method for family planning in populations of women with SUDs. This may reflect that women with SUDs need more time and assistance to clarify their personal goals, understand available options, and make choices regarding family planning.

Researchers in an integrated behavioral intervention called CHOICES, not to be confused with the Contraceptive CHOICE Project, used motivational interviewing (MI) and cognitive-behavioral strategies (CBT) targeting adoption of effective contraception and reduction of alcohol use. The program has been effectively replicated in a variety of settings including substance abuse treatment settings and urban jails (Floyd et al, 2007; Velasquez, Von Sternberg, & Parrish, 2013). More recently, the CHOICES program was modified to be culturally and linguistically appropriate to serve American Indian women and tested in three additional settings. The researches who developed the CHOICES-based interventions maintained validity, highlighting the capacity of the intervention to be effectively implemented across settings and populations (Hanson, Ingersoll, & Pourier, 2015; Hanson et al., 2017).

Reproductive Justice

Many researchers emphasized the importance of justice. Others highlighted that it must be appreciated that the choice of a contraceptive method is a personal decision that is highly contextual; therefore, no form should be promoted as first-line for everyone as effectiveness is not the only consideration. Authors stressed that efforts to improve access must not lead to coercion; incentive-based interventions promoting LARCs came under close ethical review (Downey, Arteaga, Villasenor, & Gomez, 2017; Gomez, Fuentes, & Allina, 2014; Won, Blumenthal-Barby, & Chacko, 2017). Gubrium et al. (2016) caution of the risks of uncritical LARC promotion and promote a reproductive justice approach that includes reducing barriers to accessing LARC while prioritizing patient autonomy. Respecting the decision not to use these methods or to have these methods removed when requested is foundational. In addition to the accurate data on method effectiveness, family planning requires providers to engage with women to consider factors that are important to them. Shared decision making is an approach that emerged in the literature. Engaging the woman in making a decision that she believes is best for her accepts the intimate and complex context of contraceptive decision-making and prioritizes patient autonomy (Chen, Lindley, Kimport, & Dehlendorf, 2019; Downey et al., 2017).

Measuring What Matters Ethically

Leaders in SUD programs desiring to develop or improve RHC services will likely need to choose outcome measurements to demonstrate program success, justify funding and, sometimes, reward providers. The items chosen to be measured will have a significant effect on how programs are implemented and how the autonomy of those served is impacted. Therefore, there is an ethical imperative to match quality improvement outcomes measurements to the core, ethical values of family planning care (Dehlendorf et al., 2018). For example, while reducing

barriers to knowledge, access, and cost is desired, it must be done in an ethical manner that prioritizes autonomy (Goodman, Onwumere, Milam, & Pelper, 2017). Gubrium and colleagues (2016) caution against using the number of LARCs placed as an outcome goal as this could lead to uncritical promotion of LARC methods. Instead, the authors promote a reproductive justice approach that includes reducing barriers to accessing LARCs while prioritizing patient autonomy.

While contraceptive effectiveness is an important consideration in contraceptive counseling, a woman's lived experience and her own expertise regarding her birth control preferences need to be elicited and respected (Chen, Lindley, Kimport, & Dehlendorf, 2019; Downey, Arteaga, Villasenor, & Gomez, 2017; Fox et al., 2018; Gomez, Fuentes, & Allina, 2014). Providers need to be aware of their own biases and prioritize their clients preferences. The freedom of choice and the absence of coercion regarding method of choice is an essential component of any family planning program. Additionally, the freedom to readily access care to change or discontinue a birth control method is essential to ethical contraceptive care. Many researchers have measured outcomes of contraception initiation and effective contraception use (Buckel, Maddipati, Goodman, Peipert, & Madden, 2019; Hanson et al., 2017; Heil et al., 2016; Lopez, Grey, Chen, Tolley, & Stockton, 2016; McNicholas, Madden, Secura, & Peipert, 2014; Velasquez et al., 2017) (Appendix A).

While these outcomes may be important to record, they must not be used to incentivize providers as this too has the potential to reward coercive contraceptive counseling. There are intentionally no set benchmarks for contraceptive use and there is intentionally no goal to reach 100% use (U. S. Office of Population Affairs [OPA], 2020). This reflects the understanding that many women have personal or religious objections to using contraception. Simply,

contraceptive counseling is meant to inform all women of their options, not to have all women on a method.

Other measurements used have included: documentation of screening for pregnancy desire, documentation of reproductive life planning, and documentation of contraception counseling (Baldwin, Singhal, & Allen, 2018; Simons & Kohn, 2018; Stulberg, Dahlquist, Disterhoft, Bello, & Hunter, 2019; Thiel de Bocanegra, McKean, Darney, Saleeby, & Hulett, 2018) (Appendix A). These measures encourage providers to engage more frequently in conversations about family formation and success can be measured separately from a client's choice regarding birth control.

It is important that these measures account for the dynamic nuances of women's thoughts about pregnancy. For example, a woman who does not wish to "plan" a pregnancy and would prefer to "let things happen" should not be recorded as a negative outcome. The outcome measurement should be positive or negative as she defines it. To achieve this kind of measurement, Gubrium et al. (2016) argue the primary indicator of quality for family planning programs should be based on the client's experience of being truly respected and cared for. Many researchers used locally produced questionnaires with some risk of bias to assess contraceptive continuation and substance use. One notable deviation was Dehlendorf and colleagues. They measured the patient experience using validated measurement instruments: Interpersonal Quality of Family Planning Score and the Informed Decision and Uncertainty subscales of the Decisional Conflict Scale (Appendix A).

Person-centered family planning researchers and advocates recommend measuring the client experience using validated measurement instruments such as the Interpersonal Quality of Family Planning (IQFP) score (Dehlendorf et al., 2017; Dehlendorf, Henderson, Vittinghoff,

Steinauer, & Hessler, 2018). In a large prospective study, researchers used the IQFP and demonstrated that the client experience of the quality of interpersonal care influenced contraceptive use (Dehlendorf et al., 2016). This measurement focuses the attention on interpersonal communication and the providers' skills in eliciting the patient perspective, establishing trust, building rapport, providing enough information, and supporting informed decision making (Dehlendorf et al., 2016). The IQFP scale provides a way to "define 'quality' from the perspective of an individual member of a defined population" as recommended by the Institute for Healthcare Improvement (IHI) Triple Aim (IHI, 2020; Mery, Majumder, Brown & Dobrow, 2017).

Literature Review Conclusion

The evidence from the literature supports the value of family planning services available on-site in SUD treatment programs. Location is a key feature of convenience and acceptability for women seeking family planning. Integrating reproductive life planning services with substance use recovery approaches recovery and overall health goals in a more holistic way. Staff can modify support and information offered to be sensitive to clients in recovery. Clients may feel more at ease knowing the provider seeing them already knows they are in recovery. MI can provide a framework for decision-making counseling for any client needing additional support to clarify her goals and/or choose among contraceptive options available. Integrating family planning services into an existing SUD recovery program will require that staff value reproductive well-being as an integral component of health, well-being, and recovery. To achieve this, screening conversations about these services should be conducted in a proactive and routine way. The screening of all clients on admission maximizes the opportunity to provide care on-site which was a key preference of clients. A non-directive screening that allows for

women to share their desires for to have or not have a pregnancy will reduce the potential of coercion if only contraception is routinely discussed. The client experience of care should be a key consideration with intervention design and measurement of effectiveness.

Theory Application

Motivational interviewing (MI) is a counseling style that has been applied to both contraceptive counseling and SUD counseling. MI emerged as a leading intervention from the literature search (Appendix B). It is currently being used at the project site to guide SUD counseling; it may provide a natural extension of services if used as the underpinnings of new family planning counseling. MI is defined by Miller and Rollnick (2002) as a “client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence.” Markland, Ryan, Tobin and Rollnick (2005) propose that the self-determination theory (SDT) offers a coherent theoretical framework for understanding the MI process and efficacy. Fundamental to SDT is the principle that people have an innate tendency towards personal growth, integration of the self, and the resolution of inconsistency of goals and behaviors (Markland et al., 2005). Utilizing MI based on SDT can function to support individuals to reach the SDT goals of *competence*, *autonomy*, and *relatedness* (Appendix C).

Clients can progress towards the SDT concept of *competence* by understanding options available to support her reproductive desires using personalized education and MI. Clients can progress towards the SDT concept goal of *autonomy* using MI techniques that avoid coercion, explore options, and support the client to make her own decisions. The SDT concept of *relatedness*, or feeling socially supported, can be fostered by exploring client concerns, avoiding judgement, and demonstrating respect which can result in improved trust.

The combined MI and SDT model may be better than the technique of MI alone for use in family planning programs as it emphasizes the importance of autonomy and self-determination which are ethical essentials. Feelings about pregnancy and contraception are highly contextual and nuanced, with no “one right path.” MI and SDT may help some clients to resolve ambivalence by helping to clarify goals and options. MI and SDT may help others embrace their ambivalence if they genuinely prefer to not plan. Both of these are positive and acceptable outcomes, particularly when the client does not want to plan her reproductive life can be connected with well-woman care that can improve her health outcomes whether she becomes pregnant or not. MI and SDT highlights the importance of a supportive, non-judgmental provider which may be particularly valued by clients who have formerly avoided family planning services for fear of judgement, blame, or coercion.

Implementation Framework

The evidence-based practice model chosen to guide implementation is the Institute for Healthcare Improvement (IHI) Triple Aim Model for Improvement (Appendix D). The Triple Aim guides health care improvement initiatives to simultaneously pursue three goals: improve the individual experience of care, improve the health of populations, and reduce per capita cost of care for the population (Mery, Majumder, Brown, & Dobrow, 2017). The immediate outcome goal for this project is to offer family-planning screening conversations that provide an excellent care experience for the client. The long-range (unmeasured) population health goals of this project include: reduction of disparities in unintended pregnancy rates, reduction of substance exposed pregnancies, improved birth spacing, and reduction of disparities of preconception and prenatal care. The cost goals are to mitigate the high-cost per capita associated with unintended pregnancies in this population by providing ethical and effective primary prevention strategies.

This model presents three overarching questions: “What are we trying to accomplish?”, “How will we know that a change is an improvement?”, and “What change can we make that will result in an improvement?” (IHI, 2019). With initial answers in mind, the change agent(s) can begin the process of trialing changes. IHI promotes the Plan-Do-Study-Act (PDSA) cycle to accelerate quality improvement efforts. The steps in the cycle are: *plan* the intervention, including a plan for collecting data; *do* a small-scale test of the intervention; *study* the data and results; and *act* by refining the changes based on what was learned from the tested intervention. The cycle can be repeated as often and frequently as needed in an upward progression that moves the organization closer to achieving their aims (IHI, 2019).

Methods

Intervention

A pilot demonstration of a pregnancy desire screening tool, One Key Question[®], was the initial PDSA cycle, to trial routine reproductive health conversations on admission to identify clients with needs and connect them to services offered as desired. OKQ is a patient-centered tool developed by the Oregon Foundation for Reproductive Health (OFRH) and licensed by the non-profit organization, Power to Decide. The tool screens for pregnancy desire and then follows with a conversation algorithm to determine reproductive health care needs and guide recommendations. It was designed to be used in primary care or other community settings that have not typically included reproductive healthcare conversations (Bellanca & Hunter, 2013). It is brief yet has the power to identify those who have straightforward needs and those who need follow-up with providers skilled in reproductive healthcare. It has been endorsed by ACOG, and the Association of Maternal and Child Health Programs (ACOG, 2016, Association of Maternal and Child Health Programs, 2019). The tool is aligned with the Office of Population Affairs and

the CDC's Quality in Family Planning service delivery recommendations (Gavin et al., 2014). It was designed to be non-directional meaning that it can be equally valuable to those who desire pregnancy, those who don't, and those who are okay either way or unsure. It is patient-centric, aimed at understanding intentions, and non-judgmental. It provides guidance for recommended follow-up care for contraceptive counseling, preconception counseling, or general reproductive and well-woman care depending on the client response (Power to Decide, 2020). It confines the context of the conversation to a one-year time frame with an initial question to be asked verbatim, "Would you like to become pregnant in the next year?"

Measurements and Instruments

Selecting appropriate outcome measurements maintains the focus of the project on the high-level goals of the organization (IHI, 2019). A modified version of the Interpersonal Quality of Family Planning Scale-Reduced (IQFP-R) was created to measure the effectiveness the family planning screening process. The IQFP-R is a parsimonious version of the original IQFP scale reducing the eleven indicators to four: feeling respected, feeling informed, having preferences elicited, and having preferences honored (Dehlendorf et al., 2017). This original IQFP is a validated and reliable tool. It was developed by Dehlendorf and colleagues (2017) to be aligned with the key client experience measures that have been found to affect contraception choice (Appendix B).

The IQFP-R is specific to contraception counseling. It was modified version for this project to be non-directional for the purposes of initial screening conversations. The modification enables it to be appropriate to for use with those who do or do not desire pregnancy. This modification was made with the permission and assistance of the original researcher, Christine Dehlendorf, MD, MS Professor of Family Community Medicine at the University of California,

San Francisco. A secondary review and further assistance in rewording the tool was provided by Lisa Callegari, MD, MPH Associate Professor of Obstetrics and Gynecology at the University of Washington. The resulting tool is a five-point Likert scale like the originals. Face symbols were added, similar to their use in pain scales, following cultural and literacy appropriateness principles to allow for easier recognition of the direction of the scale (Appendix F).

Data Analysis

Responses to OKQ and subsequent questions were recorded by the interviewer on a paper record (Appendix E). Descriptive and summary statistics were tabulated using IntellectusStatistics™ to describe the magnitude of healthcare needs, the desires for care at the on-site integrated clinic, and the client experience of care of the screening process.

Results

Summary statistics were calculated for each interval and ratio variable. Frequencies and percentages were calculated for each nominal variable.

Participants

The total number of women admitted to Crossroads, Inc. for residential care in the month of October 2019 was 83. 77 clients were available on the days screenings were conducted; six were in the hospital. Of the available 77, 65 were of reproductive age defined as 18-49 years ($n=65$, 84%). Crossroads, Inc. does not admit people under the age of 18. Two people declined to participate.

Sixty-three clients agreed to initiate the OKQ conversation. All who initiated the conversation, completed the conversation. OKQ was not applicable for 18 participants due to

surgeries or procedures resulting in permanent sterilization. Statistics were compiled to describe the 45 clients for whom OKQ applied.

Demographics

The most frequently observed category of race was White ($n = 34$, 76%). The most frequently observed category of ethnicity was Non-Hispanic ($n = 30$, 67%). The most frequently observed category of gender was female ($n = 44$, 98%). Client age averaged 30.38 years with a range of 19 to 45 years of age ($SD = 6.59$). Findings are presented in Table 1.

Length of Residential Stay at Screening Time

The average number of days in residence for the sample at the time of screening was 4.91 with a range of 1 to 17 days ($SD = 3.18$). Findings are presented in Table 2.

Individual Screening Duration

The duration of the screening conversations averaged 9.60 minutes; the shortest interview lasted 3 minutes and the longest lasted 25 minutes ($SD = 4.65$). Findings are presented in Table 2.

Responses to OKQ

The most frequently observed response to OKQ: “Would you like to become pregnant in the next year?” was No ($n = 31$, 69%), followed by Yes ($n=7$, 16%), Okay either way ($n=6$, 13%), and Unsure ($n=1$, 2%). Responses are presented in Table 1 and Figure 1.

Responded “No.”

To describe the subset of clients that answered “No” to OKQ, frequencies and percentages were calculated for the following variables: folic acid use, birth control method, level of satisfaction with current birth control method, history of well woman exam in the last 12

months, offers of well woman referrals, acceptances of well woman referrals, offers of contraception care, acceptances of contraception care referrals, and other referrals made based on client request.

None of the women who answered “No” to OKQ were currently taking daily folic acid ($n = 31, 100\%$). The majority were not using any form of birth control ($n = 17, 55\%$). The next most frequent response to birth control method use was abstinence ($n=4, 13\%$). Four women reported they had levonorgestrel implants in situ (13%); all were satisfied with this method. One respondent had an implant that was expired and she desired a replacement with a new implant. An IUD was used by two women (6%), one copper device and one levonorgestrel IUD; both were satisfied with their IUD method. The other methods reported were: withdrawal, natural family planning, and female partners only ($n=1, 3\%$) for each.

The majority of clients had not had a well woman visit in the last 12 months ($n = 21, 68\%$). Well woman visits were offered to all women who had not had a well woman visit in the past 12 months and one additional referral was offered in response to a client’s request to have hers repeated at the integrated clinic ($n = 22, 71\%$). All well woman visit referrals were accepted ($n = 22, 71\%$). Contraception care referrals were offered to clients who stated they were unhappy with their current method, not using a method, or using a method that was not in the most effective category ($n = 22, 71\%$). Of those offered contraception care referrals, 86% were accepted ($n = 19$). Frequencies and percentages of variables related to people who answered “No” are presented in Table 2.

Responded “Yes.”

Women who desired pregnancy in the next year most frequently answered that they were not taking folic acid ($n = 6, 86\%$), had not had a preconception care appointment in the last 12 months ($n = 6, 86\%$), and had not had a well woman visit appointment in the last 12 months ($n = 4, 57\%$). All women who were overdue for a well woman visit ($n = 4, 57\%$) were offered referrals for a well woman visit. All women who desired pregnancy in the next year, but had not had a preconception care appointment in the last year were offered a preconception appointment ($n = 6, 86\%$). All referrals offered were accepted ($n=10, 100\%$) Frequencies and percentages of this subset are presented in Table 3.

Responded “Ok either way.”

None of participants who responded “Okay either way” to OKQ were taking folic acid ($n = 6, 100\%$). Most had not had a preconception care appointment in the prior 12 months ($n = 5, 83\%$). Condoms were being used as birth control by one participant ($n=1, 17\%$), the others were not using any form of birth control ($n = 5, 83\%$). Half reported they had had a well woman visit in the prior 12 months, with the other half reporting they had not, each with an observed frequency of 3 (50%). All were offered general reproductive care appointments ($n = 6, 100\%$). All of these referrals were accepted ($n = 6, 100\%$). Well woman visits were offered to all who were overdue, with an observed frequency of 3 (50%). All well woman visit referrals were accepted ($n=3, 100\%$). Frequencies and percentages of this subset are presented in Table 4.

Responded “Unsure.”

Only one client responded to OKQ as “Unsure.” She was not taking folic acid, was virginal, and planned continued abstinence. However, she was “unsure” about her feelings about pregnancy in the next year and desired initiating daily folic acid. She had had a recent well woman visit. A referral was made to the clinic to initiate a multivitamin with folic acid and receive general reproductive health care and guidance. She accepted the referral.

Including All Participants

Clients for whom OKQ was not applicable, were briefly screened for well-woman visit or other sexual health appointment needs. The statistics to describe the overall magnitude of needs and desires for care at the on-site clinic were, therefore, based on the whole participant sample ($n=63$). Some clients received more than one referral type. For example, one individual may have received a referral for well-woman care and contraception care. In all, 83 referrals were made. The most frequent referral type made was for well-woman care, representing just over half of all referrals made ($n=44$, 53%), followed by contraception care ($n=21$, 25%), preconception care ($n=8$, 10%), and general reproductive health appointments offered to women ambivalent about pregnancy desire ($n=6$, 7%). Other referrals ($n=4$, 5%) included: a six-week postpartum care visit, a follow up regarding abnormal pap results from an outside provider, a request for multivitamins containing folic acid, and sexually transmitted infection testing. Frequencies and percentages are presented in Table 6.

Client Experience of Care

Frequencies and percentages were calculated for ratings of interpersonal quality of care items. The full wording of the items on the scale provided to client were as follows: *enough*

information, “giving me enough information about services available related to pregnancy or birth control;” *listened to*, “letting me say what mattered to me about desiring or not desiring pregnancy;” *respected*, “respecting me as a person;” and *taken seriously*, “taking my preferences seriously related to pregnancy or birth control.”

Likert Scale.

All surveys completed ($n=54$, 100%) had ratings for each interpersonal quality of care item measured, with no missing data. The overall most frequently observed category of rating was Excellent ($n = 198$, 92%). Clients reported their receipt of *enough information*, most frequently as Excellent ($n = 51$, 94%). In regards to being *listened to*, the most frequently observed category of rating was Excellent ($n = 48$, 89%). Most clients rated their experience of being *respected*, as Excellent ($n = 49$, 91%). People felt *taken seriously*, with the most frequently rating of Excellent ($n = 50$, 93%). Frequencies and percentages are presented in Table 7 and Figure 2.

Qualitative.

The collection of qualitative data was not planned. The client experience of care scale used did not have a comments section. However, several clients took the initiative to add unsolicited comments in the margin of the scale. All written comments are listed here, verbatim.

- “Thank you!” was written adjacent to the item, “Letting me say what mattered to me about desiring or not desiring pregnancy”;
- “Thank (drawing of heart) You”;
- “Y’all the shit!”;

- “(I liked) having people listen to me, really caring for what I need and explaining all my tools that I can use! 10/10”;
- “I feel very happy with the information I now have that I didn’t before, thank you so much for talking as well as listening to me. I’m glad you came to see me (drawing of smiling face)”;
- “Thanks for taking time out of your day to come see us”;
- “Love it”;
- “Very informative. I look forward to 360 health care. I’m glad these services are offered”; and
- “Programs like this should be put into place more often.”

Limitations

There is a discrepancy in the number of clients responding to OKQ and satisfaction surveys. This is because some clients who responded “Not applicable” to OKQ completed the satisfaction survey.

Implications

Robust programming to support RWB within recovery programs is a promising way to improve the overall well-being of clients and population health. The evidence from the literature and the results of this project highlight the value of family-planning services co-located with SUD programs. This project identified significant reproductive health needs for this population consistent with those described in the literature. This project also adds to the small, but growing body of evidence that demonstrates clients are agreeable to having conversations about their pregnancy desires, want quality reproductive health care, and express a preference for receiving that care in an integrated way within their recovery program. Clients expressed feeling more at

ease, knowing that the provider who would see them for RHC already knows they are in recovery.

Multidisciplinary, interprofessional collaboration is essential to developing robust programming that recognizes the multifaceted components of reproductive well-being. Advocates and healthcare leaders in reproductive health care need to strengthen collaborative partnerships with SUD recovery programs with a joint aim to improve client well-being. Interprofessional conferences and education programs that connect nurse practitioners, physicians, social workers, counselors, and alcohol and drug peer counselors are needed to foster improved understanding of this population. Innovative programs to support women in recovery to achieve RWB will likely benefit from the integration of multiple perspectives and skills.

Several pregnancy intention screening guides exist. The OKQ tool is unique in offering a one-year timeframe to focus the conversation. This may make the tool particularly well suited for SUD programs that wish to implement screening of all clients. The one-year time frame makes the conversation more focused on the immediate and near future needs of clients. This may make the screening more feasible for non-expert family planning conversations. It also may match the needs of clients in a rapidly evolving state of health. Asking women to consider the next year only may ease the conversation as we know reproductive life desires or plans are highly contextual and fluid (Edmonds & Ayres, 2017). Using OKQ does not preclude talking about goals and feelings about pregnancy beyond the one-year timeframe if raised by clients; several clients in this sample raised questions or made comments about their long-term plans and these were easy to address individually within the OKQ framework. However, because the OKQ tool does not expressly ask people to consider their whole life reproductive plan, women in

recovery may have accepted this screening tool more readily than others tools. Further research should be completed to compare OKQ to other screening tools for use with this population.

Recommendations

Full implementation of OKQ was recommended to the leadership team at Crossroads, Inc. The Crossroads mission to care for the whole person can be enhanced by addressing clients' RWB as an important part of their overall well-being. Power to Decide offers on-site provider training and ongoing training and maintenance of certification through "train the trainer" formats to ensure OKQ is used with fidelity. Full electronic health record (EHR) integration is available to support billing for services and interdisciplinary communication regarding clients' desires, needs, and follow up care plans. Integrating the screening tool into the EHR could be done in a second PDSA cycle. Integration with the EHR could facilitate use and efficacy, because the responses and follow up plan could be readily accessed by all providers involved in the client's care. Additionally, linking the tool to the EHR would aid outcome measurements.

Other agencies and organizations serving women with SUD are recommended to consider ways to incorporate reproductive health education and care. Organizations that are too small or otherwise limited in their capacity to offer a full range of reproductive health care services, can pilot OKQ to screen and refer clients to known qualified outside resources. Building partnerships and alliances between reproductive health care providers and recovery providers can better serve women with SUD bidirectionally in settings where full integration is not possible. OKQ offers two algorithms to guide conversations. One is designed for clinicians who can provide the full service, the other is designed for non-clinical staff to use a screening and referral tool. OKQ maintains fidelity when the question is asked verbatim, "Would you like to become pregnant in the next year?" and provides four answer options, "Yes", "No", "Okay

either way”, and “Unsure.” Individual organizations can follow one of the two algorithms or adapt them to fit the setting. This enables a variety of settings to implement this tool with fidelity.

The client experience of care can be measured and should be a key outcome measurement in RHC programs. RHC is unlike other areas of health, as positive outcomes are not directional. Becoming pregnant as soon as possible may be one persons goal. Never becoming pregnant may be another’s goal. And, of course, there are many other desired personal outcomes between these two poles. Therefore, it is essential to frame the success of family planning and RHC programs based on individual care experiences. Programs can use these measurements to ensure clients goals were taken seriously and clients were given the support and information that mattered to them. The IQFP is one tool that has been validated to measure the client experience of care with contraception specific conversations. The adaptation of this tool to be non-directional was useful to maintain the focus of the client experience for this project. The hope is more organizations will implement RHC and pregnancy intention screening programs. A tool is needed to evaluate these programs. The adaptation of the IQFP used in this project may be useful to other organizations planning to implement pregnancy intention screening routinely to evaluate how these screening conversations are perceived by clients. As this tool is not specific to women in recovery, it may be helpful for evaluating family planning screening programs in a variety of settings.

Conclusion

Empowering women in recovery to consider their reproductive desires and then assisting them with their reproductive health needs has far reaching implications. Clients can improve their individual sense of self-determination and reduce their risk of complications associated with

unintended pregnancies. Integrating RHC in SUD settings has the potential to reduce substance exposed pregnancies, NAS, and FASD. The financial savings could be substantial. Screening for pregnancy desire and connecting women to desired reproductive healthcare aligns the recommendations of key organizations including the AAP, CDC, ACOG, WHO, and SAMSHA. This primary prevention strategy has the power to simultaneously improve the health and welfare of two generations.

More work needs to be done to support all women to reach the “highest standard of sexual and reproductive health as they themselves define it” (Dehlendorf, 2018). Reducing health disparities for women in recovery requires disrupting the current system of separated care and reframing reproductive life planning as a priority in substance use treatment programs. Achieving a greater degree of reproductive well-being is an important aspect of helping women experience a greater degree of overall wellbeing. Programs for recovery from SUD are a largely unused setting that have the potential to provide quality RHC in a way that may better support the priorities and perspectives of women in recovery. These programs may be particularly well suited to provide RHC in a way that reduces stigma and fears, empowers clients to consider their desires, and respects individual autonomy. Collaboratively integrating quality RHC within quality SUD recovery programs has the potential to achieve public health goals by placing the client experience of care at the heart of the union.

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Appendix A

Quantitative Studies Evaluation Table

Citation	Theory/ Framework	Design	Sample/ Setting	Variables/ Definitions	Measurement/ Instruments	Data Analysis	Findings	Application to practice
Buckel et al. (2019) Effect of staff training and cost support on provision of long-acting reversible contraception in community health centers. Funding: PCORG & Eunice Kennedy Shriver NICHD Conflicts: Madden serves on a data safety board for Bayer CC. Peipert receives research funding from Bayer, & Merck. Country: USA	Framework: National Institutes of Health Director’s Council of Public Representatives Community Engagement Plan to guide partnership with FQHC And Social determinants of health framework	Design: Controlled time-trend study, a nonrandomized study design, outcomes are compared before and after a change occurs in the healthcare setting. This was selected as the participating health centers were not willing to be randomized to “Enhanced Care” Purpose: test the effectiveness of an adaptation of the CHOICE project in federally qualified health centers with the goal of reducing UP	Sample: N=1561 407 not interested 113 ineligible 1041 eligible 1008 enrolled n=502 for enhanced care n=506 for Complete CHOICE Setting: Three FQHC in the Midwest Inclusion: healthcare appointments at the participating center, 15-45y, spoke English or Spanish, not pregnant, VS currently or planned within 3m, not-sterile/ partner not sterile.	IV1: “Enhanced Care” IV2: “Complete CHOICE” Enhanced Care: CHOICE counseling plus usual care; Complete CHOICE: CHOICE counseling, HCP education, in-clinic stocking of LARC, and no-cost LARC for uninsured DV1: UP DV2: SDP	Baseline questionnaire and post-appointment survey	REDCap electronic data capture tools Fisher’s exact test Univariate and multivariable Poisson regressions	Women in “Complete CHOICE” were more likely to choose LARC (54.0% vs. 30.5%, p<0.01) and almost 5 times more likely to receive a same-day IUD or implant (RRadj 4.73;95%CI 3.20-6.98)	LOE: IV Limitations: possible conflicts of interest Strengths: Provides insight in an area with little research Application: Provider education is an important element of LARC initiation, particularly SDP. Cost is an important determinant of LARC initiation.

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Dehlendorf et al. (2019) Cluster randomized trial of a patient-centered contraceptive decision support tool, My Birth Control. Funding: PCORI Conflicts: none recognized Country: USA	Decision Conflict Theory and Ecological Rationality	Design: Cluster Randomized Trial; randomized at the provider level. Purpose: to evaluate the effect of My Birth Control on contraceptive continuation, experience of contraceptive care, and decision quality	n =758 28 providers participated and 758 patients enrolled Racially/ethnically diverse; <25% identified as white Setting: 4 outpatient clinics in San Francisco Bay area 1) Family planning clinic 2) Department of Health clinic 3) College student health clinic 4) Hospital-affiliated outpatient clinic	IV1: interaction with My Birth Control decision tool prior to their family planning visit DV1: CC continuation DV2: patient experience of care DV3: UP	Interpersonal Quality of Family Planning score Informed decision and uncertainty subscales of the Decisional Conflict Scale Post visit survey	Mixed effects logistic regression models with multiple imputation for missing data	No effect on 7m CC continuation (56.6% and 59.6% for I and C, odds ratio, 0.89; 95% CI, 0.65-1.22) Intervention did enhance the experience (66.0% vs. 57.4%, odds ratio, 1.45; 95% CI, 1.03-2.05) as Informed decision scores (50.5% vs 43.2%, odds ratio, 1.34; 95% CI, 1.0-1.80) No significant effect on pregnancy outcomes	LOE: I Strengths: Addresses importance of patient-centered care and patient preferences Limitations: potential for contamination between arms if providers at same clinic shared experiences. Patients and providers were not blinded. Application: Intervention effect on patient experience is important given the personal nature of contraceptive decision making

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<p>Fox et al. (2018). Client preferences for contraceptive counseling: A systematic review</p> <p>Funding: Office of Population Affairs, U.S. Department of Health and Human Services and Atlas Research, Inc.</p> <p>Conflicts: none recognized</p> <p>Country: USA</p>	Client-centered care	<p>Design: SR</p> <p>Purpose: Updating the Systematic Reviews used to develop the US Recommendations for Providing Quality Family Planning Services, adding key question to prior SR.</p>	<p>N=26</p> <p>DS: 16 electronic databases</p> <p>Inclusion: 1)All study designs, 2)US, Canada, Australia, New Zealand, or European countries categorized as “very high” on the Human Development Index, 3)written in English, 4)available as full-test, 5)women studied age 15-45y, 6)study related to client preferences for contraceptive counseling</p>	<p>1 Key question: “What are clients’ preferences with regard to contraceptive counseling approaches in the family planning setting?”</p> <p>4 domains: Contraceptive Information, The Decision-Making Process, The Provider-Client Relationship, The Context in which Contraceptive Counseling is provided</p>	Not addressed	PRISMA, USPSTF rating of evidence strength	<p>19 articles reported preferences for the information received, 13 reported preferences for the decision-making process, 13 the relationship between providers and clients, and 11 about context in which CC counseling is delivered. Clients prefer comprehensive, personalized counseling that prioritizes client autonomy, positive relationships with providers, and diverse preferences for the context/setting.</p>	<p>LOE: I</p> <p>Limitations: small sample sizes, limited evidence from incarcerated women, women with SUD, risk for bias among recruitment methods for qualitative research.</p> <p>Strengths: comprehensive inclusion of studies of any design; includes rich qualitative data.</p> <p>Application: Personalized, comprehensive counseling in a variety of settings is desired</p>

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Hanson et al. (2017) Impact of the CHOICES intervention in preventing alcohol-exposed pregnancies in American Indian women. Funding: IHS and NIH, National Institute on Minority Health and Health Disparities Conflicts: none recognized Country: USA	MI	Design: Cohort study Purpose: Present data on the impact that the OST CHOICES Program had on risk for AEP among American Indian women	Sample: n=193 n=99 Setting: Oglala Sioux Tribe communities, two on reservation, one off reservation Inclusion: Race: AI, Age: 18+y, high risk for AEP defined as: VS with males, not using any CC or using a method incorrectly/inconsistently and exceed low risk alcohol intake defined as: 4 or more drinks per occasion or 8 or more drinks per week. Exclusion: PM, PH, PBTL	Program Intervention: modified CHOICES program. Outcomes: 1)Alcohol intake 2)CC correct use	National Institute on Alcohol Abuse and Alcoholism, screening tool	One-way ANOVA and Proc Glimmix was used to run negative binomial models with random intercepts generalized estimation equation model	Average 51% completed both 3m and 6m follow-ups. Significant decrease in AEP risk from baseline at both 3 and 6m follow-ups. Women in program were more likely to reduce risk of AEP via CC vs. reduced drinking	LOE: IV Strengths: vulnerable population Weaknesses: no control group >20% loss of participants, sample size did not allow for nesting by site or a random slope Application: CHOICES program can be modified to be culturally and linguistically appropriate for high-risk populations. Feasibility: Intervention was effective in 2-4 sessions. MI by trained community members.

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Heil et al., (2016). Using behavioral economic theory to increase use of effective contraceptives among opioid-maintained women at risk of unintended pregnancy. Funding: National Institute on Drug Abuse Conflicts: none recognized Country: USA	Behavioral economic theory	Design: RCT Purpose: Examine behavioral economic theory to reduce barriers to effective CC, increase initiation and continuation of effective methods, and reduce UP in women in MAT for SUD	n=31 Inclusion criteria: Age: 18-44y, VS in past 3 m, 6+ m PP, not planning pregnancy in next 6 m, ME to use CC, in MAT 30+ d, English speaking Exclusion criteria: PM, PH, BTL, or imminent incarceration Setting: co-located with MAT clinic	IV 1 -JDM with an APRN using the WHO Contraceptive Decision-Making Tool IV 2 - 13 follow-up visits over 6 m, vouchers of approx. \$15 for attending follow up visits DV 1 - participant-reported contraceptive use DV 2 - unintended pregnancy	Screening: 1)Time-Line Followback 2)Risk Assessment Battery- Sexual practices section 3)Addiction Severity Index- Fifth edition 4)Beck Depression Inventory 5)Barrett Impulsivity Scale Version 1 Outcomes: DV 1 - PR of effective use as defined by guidelines for use DV 2 - clinic UPT	Fisher’s exact test	↑Initiation of CC (100% vs. 29%, p<0.01). ↑Continuation of CC 1m: (63% vs. 13%, p<0.01) 3m: (88% vs. 20%, p<0.001) 6m:(94% vs. 13%, p<0.001) ↓UP in experimental vs. usual care (0% vs 20%, p=0.10)	LOE: I Limitations: Small sample Strengths: Setting similar to project setting Application: Removing cost can increase initiation. Close follow-up can improve CC continuation. Incentives can increase attendance. Using WHO Contraceptive Decision-Making Tool can assist joint decision making

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<p>Lopez et al. (2016). Theory-based interventions for contraception.</p> <p>Funding: NICHHD & U.S. Agency for International Development Conflicts: none recognized Country: USA</p>	Behavioral theory	<p>Design: SR of RCTs</p> <p>Purpose: review RCTs that tested a theoretical approach to inform contraceptive choice and encourage or improve contraceptive use.</p>	<p>N= 25 DS: MEDLINE via PubMed, Cochrane, POPLINE, Web of Science, ClinicalTrials.gov, ICTRP</p> <p>Inclusion criteria: RCT that tested an intervention with an explicit theoretical basis for improving contraceptive use. Exclusion: trial purpose preventing STI or HIV not pregnancy prevention, trials focusing on high-risk groups</p>	<p>IV: behavioral theory-based interventions to improve CC use DV1:CC use DV2: pregnancy</p>	UPT, PR pregnancy, PR use of CC	Mantel-Haenszel odds ratio with 95% confidence interval	<p>SCT and MI had strongest evidence of effectiveness.</p> <p>MI was effective addressing needs of special populations of adults in 1-5 sessions. MI was effective in preventing AEP and pregnancy after TAB.</p>	<p>LOE: I</p> <p>Limitations: excluded trials that focused on high-risk groups</p> <p>Strengths: Interventions with a theoretical base help explain/ motivate behavior change</p> <p>Application to practice: The MI format may be appropriate for clinic or SUD typical length of stay</p>

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McNicholas et al. (2014). The Contraceptive CHOICE Project round up: What we did and what we learned. Country: USA Funding: anonymous foundation grant, Washington University Institute of Clinical and Translational Science, & Eunice Kennedy Shriver NICHD Bias: none recognized	Behavioral economic theory	Design: Prospective Cohort Study Purpose: Remove barriers to obtaining CC. Promote the most effective CC methods to reduced UPR on a population level.	n =9256 Inclusion: age: 14-45y, reside in St. Louis, not desiring pregnancy for at 12+m, desires reversible CC, VS in past 6m or planned in next 6m, willing to start a new CC method of choice. Exclusion: PH, BTL Setting: St. Louis	IV -reversible CC method of choice at no cost for 3y, SDP offered when ME, able to change method as frequently as desired. Participant contact by phone at 3m and then every 6m for study duration Outcome1 - CC method chosen Outcome2 - CC continuation DV3 - teen pregnancy DV4 -repeat abortion rate	Counseling based on GATHER process: CC education was delivered with a script, CC in order of effectiveness of the method.	Obtained from linked reports: Chi-square, Students t-test, logistic regression for multivariable analysis, Poisson regression with robust error variance.	↑ LARC use (<5% at baseline vs. 75% at end of study) ↑ continuation in LARC users ↓ sexual risk-taking behaviors, # of partners in program participants ↓UPR	LOE: IV Strengths: Large representative sample. 9y study. Robust linked website. Weaknesses No control group Application When the barriers of cost, access, and knowledge are removed, women choose the most effective and least user-dependent methods, they continue using them, and are highly satisfied with their choice

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<p>Matusiewicz et al., (2017). Knowledge of and concerns about long-acting reversible contraception among women in medication-assisted treatment for opioid use disorder.</p> <p>Funding: National Institutes of Health</p> <p>Bias: none recognized</p> <p>Country: USA</p>	<p>Health Belief Model</p>	<p>Design: Convenience sample of women who completed an eligibility screening for an ongoing RCT evaluating family planning interventions for this population</p> <p>Survey of contraceptive use attitudes and knowledge, supplemental survey regarding LARC methods</p>	<p>n= 83 for survey; of these, 51 (61%), completed the supplemental survey</p> <p>Inclusion: Age: 18-49y, in MAT</p> <p>Exclusion: not at risk for unintended pregnancy, or missing data</p> <p>164 completed the eligibility screen, 61 were excluded-not at risk for unintended pregnancy and another 20- missing data</p> <p>Setting: co-located with MAT clinic</p>	<p>“Familiarity with different methods”</p> <p>“Past use of methods”</p> <p>“Likelihood of future method use”</p> <p>“Perceived method knowledge”</p> <p>Knowledge of “relative effectiveness” of methods</p>	<p>Locally-developed structured interview to collect sociodemographic, clinical, and sexual/reproductive histories.</p> <p>National Campaign to Prevent Teen and Unplanned Pregnancy’s Survey of Reproductive and Contraceptive Knowledge plus 15-item locally developed supplement to assess likelihood of future use or knowledge-related items with regard to implants</p>	<p>Descriptive Statistics, Frequencies</p>	<p>Likelihood of future use: IUD- 42% unlikely to use; cited concerns- 69% side effects, 46% infection risk, 37% negative anecdotal reports. Implants: 33% unlikely to use implant; concerns- 59% removal process, 53% insertion process, 41% menstrual changes, 29% side effects</p>	<p>LOE:IV</p> <p>Weaknesses Potential bias in the sample selection, Small sample</p> <p>Strengths: Provides insights in area with limited evidence-likelihood of LARC use among women in treatment for SUD</p> <p>Application Women with SUD may trust peers>HCP, may benefit from knowledge about LARC risk/benefit implant insertion and removal</p>

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Terplan et al. (2015). Contraceptive use and method choice among women with opioid and other substance use disorders: A systematic review Funding: National Institute on Drug Abuse Conflicts: none recognized Country: SR conducted in USA. Studies reviewed conducted in: USA, Australia, England, Canada, France, Finland, and Russia	Social determinants of health framework	Design: SR Purpose: to describe contraceptive use and method of choice among women with SUDs	N=24 n=5000 DS: PubMed and PsychINFO 580 abstracts reviewed, 105 articles given full review Inclusion: human studies, English language. PubMed years 1948-2014; PsychINFO years 1806-2014, reported contraceptive use & a population of at least 50% women with SUDs	First aim- describe prevalence of contraceptive use among women with opioid and other substance use disorders Second aim- describe method of choice among contraceptive using women in this vulnerable population	National Health surveys	PRISMA	Contraception prevalence: Very effective methods: median use 7% (range: 2-29%) across 8 studies Most used method: condoms, 62% (range: 3-87%) across 17 studies	LOE: I Women with substance use disorders have an unmet need for contraception, especially for the most effective methods. Offering contraception services in conjunction with substance use treatment and promoting use of more effective methods could help meet this need and reduce unintended pregnancy

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Citation	Theory/ Framework	Design	Sample/ Setting	Variables/ Definitions	Measurement/ Instrumentation	Data Analysis	Findings	Application to practice
Velasquez et al. (2017) Preventing alcohol and tobacco exposed pregnancies: CHOICES Plus in primary care. Funding: CDC Conflicts: none recognized Country: USA	MI	Design: RCT with two intervention groups Purpose: Test the effectiveness of a modified CHOICES program: using 2 sessions instead of 4 and adding tobacco as a target behavior to reduced AEP and TEP	11, 470 women screened, 4.9% were eligible, 46.7% of those consented. N=261 CHOICES Plus n=131 Brief advice n=130 Settings: 12 primary care clinics in a large Texas public healthcare system Inclusion criteria: 18-44y, non-sterile, non-pregnant, drinking more than three drinks per day or more than seven drinks per week, sexually active, and not using effective contraception.	IV1: Brief Advice (standard of care) IV2: CHOICES Plus intervention DV1: AEP risk DV2: TEP risk DV3: risky drinking DV4: current smoking DV5: ineffective contraception	Alcohol Use Disorder Identification Test and Brief Symptom Inventory: readiness to change, pros and cons for changing, experiential and behavioral processes of change, and temptation and confidence assessed for each behavior. Timeline follow-back to produce record of daily drinking, VS, CC use. NicAlert saliva assay to assess tobacco use	Power analysis (logistic regression model approach) using GEESIZE Poisson multilevel models (SAS, version 9.3 Proc GLIMMIX) with Huber-White sandwich estimators Sensitivity intervals created to account for women lost to follow-up	CHOICES Plus group members were more likely to reduce risk of AEP: (IRR= 0.620, 95% CI=0.511, 0.757) and ARR of -0.233 (95% CI = -0.239, -0.226) CHOICE Plus group members at risk for both exposures were more likely to reduce TEP (IRR = 0.597; 95% CI=0.424, 0.840 and ARR, -0.233; 95% CI=-0.019, -0.521).	LOE: I Strengths: Streamlining of the original CHOICES intervention for application in busy urban health-care setting Limitations: reliance on self-reported outcomes Application: CHOICE Plus reduced AEP and TEP in fewer visits, improving feasibility. Demonstrates the CHOICES program can be effective with modifications to target TEP.

Key: **AEP:** alcohol exposed pregnancy; **APRN:** advanced practice registered nurse; **ARR:** absolute risk reduction; **PBTL:** post bilateral tubal ligation; **CC:** contraceptive; **CHOICES:** Changing High-risk alcohol use and Increase Contraception Effectiveness Study; **d:** days; **DV:** dependent variable; **DS:** databases searched; **FQHC:** federally qualified health centers; **HCP:** health care provider; **IHS:** Indian Health Services; **IUD:** intrauterine device; **IRR:** incidence risk ratio; **IV:** independent variable; **JDM:** joint decision making; **LARC:** long-acting reversible contraception; **LOE:** level of evidence; **los:** length of study; **m:** months; **MAT:** medication assisted therapy; **ME:** medically eligible; **MI-** motivational interview; **N:** number of studies; **n:** number of participants, **NICHD:** National Institute of Child Health and Human Development; **NIH:** National Institutes of Health; **OST:** Oglala Sioux Tribe; **PCORI:** Patient Centered Outcomes Institute; **PH:** post hysterectomy; **PM:** postmenopausal; **PP:** postpartum; **PR:** participant report; **PRISMA:** Preferred Reporting Items for Systematic Reviews and Meta-Analyses; **RCT:** randomized controlled trial; **SCT:** social cognitive theory; **SDP:** same-day placement; **SR:** systematic review; **STI:** sexually transmitted disease; **SUD:** substance use disorder; **TAB:** therapeutic abortion; **TEP:** tobacco exposed pregnancy; **UP:** unintended pregnancy; **UPT:** urine pregnancy test; **USPSTF:** United States Preventative Services Task Force **VS:** heterosexual vaginal sex; **y:** years

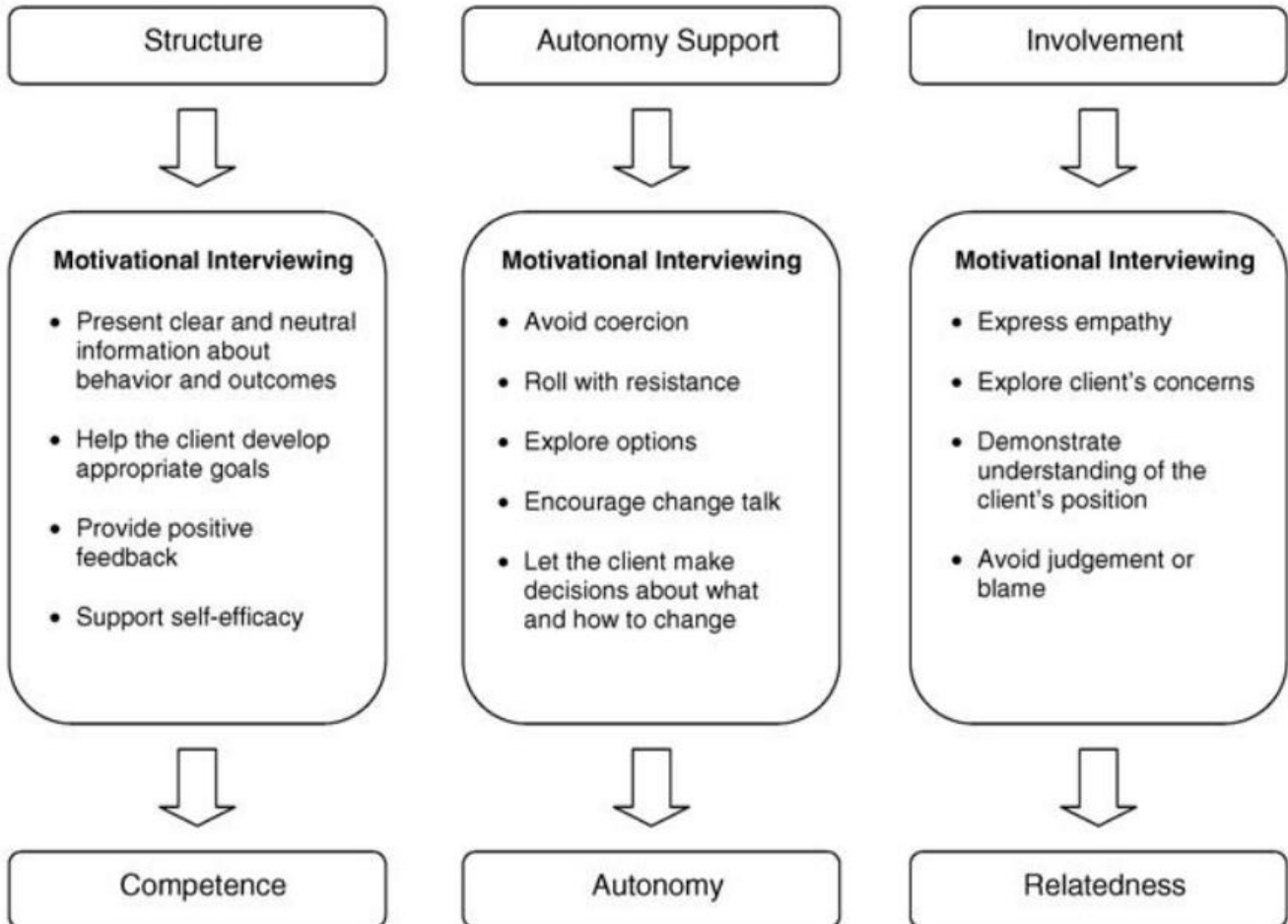
Appendix B
Synthesis Table

Studies		Buckel et al.	Dehlendorf et al.	Fox et al.	Hanson et al.	Heil et al.	Lopez et al.	McNicholas et al.	Matusiewicz et al.	Terplan et al.	Velasquez et al.
Overview	Year	2019	2019	2018	2017	2016	2016	2014	2017	2015	2017
	LOE	IV	I	I	IV	I	I	IV	IV	I	I
	Design	CTTS	RCT	SR	CH	RCT	SR	PCH	CS	SR	RCT
	Sample Size	n=1008	n=758	N=26	n=292	N=31	N=25	n=9256	n=83	N=24	n=261
	Population	G	G	G	AI/SUD	ARUP	G	SUD	SUD	SUD	SUD
	Setting	FQHC	MCT	MCT	AICS	MAT	MCT	MCT	MAT	MCT	PCC
Interventions	CHOICES/MI				X		X				X
	CHOICE program	X						X			
	GATHER	X				X		X			
	WHO DMT					X					
	MBC DMT		X								
	Train provider	X			X						X
	Remove cost	X				X		X			
Findings	Education	*	*	*	*	*	*	*	*	*	
	Decision support		*	*	*	*	*			*	
	Provider/Peer			*	*	*			*		
	Context/Setting			*	*	*	*		*	*	
	CC-I	↑			↑	↑	↑	↑			↑
	CC-C		↔		↑	↑	↑	↑			↑
	LARC-I	↑			↑			↑			↑
	LARC-C				↑			↑			↑
	SEP risk				↓	↓	↓		↓		↓
	UP					↓	↓	↓			
	PE		↑	↑	↑		↑				

Key: ↑: reported increase; ↓: reported decrease; *: important feature of study; **AI**: American Indian; **AICS**: American Indian community setting; **ARUP**: at risk of unintended pregnancy; **C**: continuation; **CC**: contraception; **CH**: cohort; **CHOICES/MI**: Changing High-risk alcohol use and Increase Contraception Effectiveness Study using motivational interviewing; **CS**: convenience sample; **CTTS**: controlled time trend study; **DMT**: decision making tool; **FQHC**: federally qualified health center; **G**: general population reproductive age women; **I**: initiation; **LARC**: long-acting reversible contraception; **LOE**: level of evidence; **MAT**: co-located with medicated assisted therapy clinic; **MBC**: “My birth control”; **MCT**: multiple clinic types; **PCC**: primary care clinic; **PCH**: prospective cohort study; **PE**: patient experience/satisfaction; **RCT**: randomized controlled trial; **SEP**: substance exposed pregnancy; **SR**: systematic review; **SUD**: substance use disorder; **UP**: unintended pregnancy; **WHO**: World Health Organization.

Appendix C

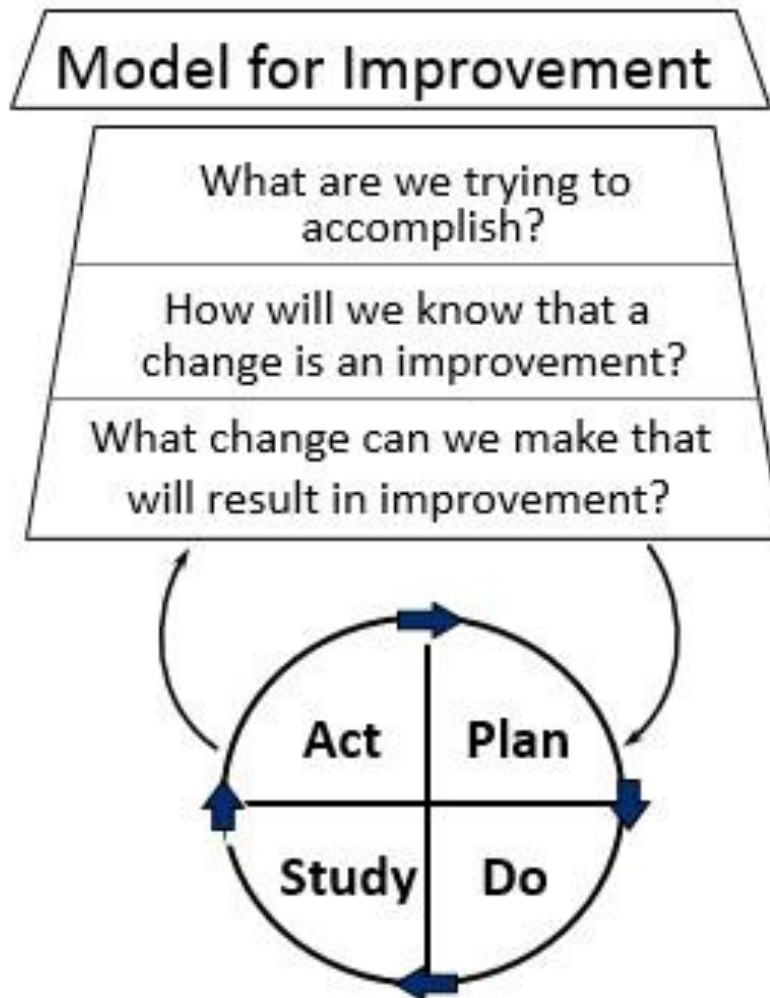
Motivational Interviewing and Self Determination Theory



(Markland, Ryan, Tobin, & Rollnick, 2005)

Appendix D

Institute for Healthcare Improvement (IHI) Triple Aim Model for Improvement



(IHI, 2019)

Appendix E

One Key Question® Conversation Guide and Client Response Record: Page 1

ONE KEY QUESTION®

Would you like to become pregnant in the next year?

Yes <input type="checkbox"/>	OK Either Way <input type="checkbox"/>	Unsure <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>	Declined <input type="checkbox"/>
<p>Are you currently taking a folic acid or a multi/prenatal vitamin? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Have you had a pre-pregnancy counseling appointment in the last 12 months? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Are you currently taking a folic acid or a multi/prenatal vitamin? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Have you had a pre-pregnancy counseling appointment in the last 12 months? Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Are you currently taking a folic acid or a multi/prenatal vitamin? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Are you using a birth control method currently? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, What method? _____</p>	<p>Are you currently taking a folic acid or a multi/prenatal vitamin? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Are you using a birth control method currently? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, What method? _____</p>	<p>Reason: Pregnant now <input type="checkbox"/> Hx: Bilateral Tubal Ligation <input type="checkbox"/> Hx: Hysterectomy <input type="checkbox"/> Other: _____</p>	<p>Reason given: None <input type="checkbox"/> Other: _____</p>

One Key Question® Conversation Guide and Client Response Record: Page 3

Plan:

Referrals offered: <input type="checkbox"/> Primary Care <input type="checkbox"/> Well-woman care <input type="checkbox"/> Preconception <input type="checkbox"/> Accepted <input type="checkbox"/> Declined Other: _____	Referrals offered: <input type="checkbox"/> Primary Care <input type="checkbox"/> Well-woman care <input type="checkbox"/> Reproductive Health <input type="checkbox"/> Accepted <input type="checkbox"/> Declined Other: _____	Referrals offered: <input type="checkbox"/> Primary Care <input type="checkbox"/> Well-woman care <input type="checkbox"/> Reproductive Health <input type="checkbox"/> Accepted <input type="checkbox"/> Declined Other: _____	Referrals offered: <input type="checkbox"/> Primary Care <input type="checkbox"/> Well-woman care <input type="checkbox"/> Contraception <input type="checkbox"/> Accepted <input type="checkbox"/> Declined Other: _____	Referrals offered: <input type="checkbox"/> Primary Care <input type="checkbox"/> Well-woman care <input type="checkbox"/> Accepted <input type="checkbox"/> Declined Other: _____	Referrals offered: <input type="checkbox"/> Primary Care <input type="checkbox"/> Well-woman care <input type="checkbox"/> Accepted <input type="checkbox"/> Declined Other: _____
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One Key Question® Conversation Guide and Client Response Record: Page 4

Today's Date: _____ Date of Admission to Crossroads: _____

Demographics

Age: _____

Ethnicity:

- Hispanic/Latino
- Non-Hispanic
- Decline to answer

Race: (all that apply):

- American Indian/Alaska Native
- Asian
- Black/African American
- Native Hawaiian/Pacific Islander
- White
- Decline to answer

Gender:

- Female
- Male
- Non-binary or agender
- Decline to answer

What sex were you assigned at birth?

- Female
- Male
- Intersex
- Decline to answer

Screening Duration: _____




Appendix F

Client Experience of Care Scale: Modified version of IQFP-R

Client Experience of Care:

Think about the talk you just had about family planning with _____ at _____ on _____

Please read the statements on the left. For each statement, please circle the number under the face that matches how you feel about the talk.

	Poor (1) 	Fair (2) 	Good (3) 	Very Good (4) 	Excellent (5) 
Respecting me as a person	1	2	3	4	5
Letting me say what mattered to me about desiring or not desiring pregnancy	1	2	3	4	5
Taking my preferences seriously related to pregnancy or birth control	1	2	3	4	5
Giving me enough information about services available related to pregnancy or birth control	1	2	3	4	5

This scale is a modified version of the IQFP-R developed by Dr. Christine Dehlendorf. It is been reviewed by her and used with her permission. It was modified to be appropriate for screening and referral for reproductive health care.

Tables

Table 1

Frequency Table for Demographic Variables and Answer to OKQ

Variable	<i>n</i>	%
Race		
American Indian/Alaskan Native	5	11
Asian	0	0
Black	4	9
Declined	0	0
Multiracial	1	2
White	34	76
Missing	1	2
Ethnicity		
Declined	0	0
Hispanic	14	31
Non-Hispanic	30	67
Missing	1	2
Gender		
Declined	0	0
Female	44	98
Non-binary	1	2
Missing	0	0
OKQ		
No	31	69
OK Either Way	6	13
Unsure	1	2
Yes	7	16

Note. Due to rounding errors, percentages may not equal 100%.

Table 2

Summary Statistics Table for Interval and Ratio Variables

Variable	<i>M</i>	<i>SD</i>	<i>N</i>	Min	Max
Age (years)	30.38	6.59	45	19.00	45.00
Days in Residence	4.91	3.18	45	1.00	17.00
Screening Duration (minutes)	9.60	4.65	45	3.00	25.00

Table 3

Subset Frequency Table for Variables for People who Responded “No” to OKQ

Variable	<i>N</i>	%
Taking folic acid		
No	31	100
Missing	0	0
Birth control method		
None	17	55
Abstinence	4	13
Nexplanon	3	10
Mirena	1	3
Expired Nexplanon	1	3
Withdrawal	1	3
Natural Family Planning	1	3
Condoms	1	3
Paragard	1	3
Female partners only	1	3
Missing	0	0
Happy with birth control method		
No	1	3
not applicable	18	58
Yes	10	32
Somewhat	2	6
Missing	0	0
Well woman exam in last 12m		
No	21	68
Yes	10	32
Missing	0	0
Well woman referral offered		
Yes	22	71
No	9	29
Missing	0	0
Well woman referral accepted		
Yes	22	71
not applicable	8	26
No	1	3
Missing	0	0
Contraception care offered		
Yes	22	71
No	9	29

Missing	0	0
Contraception referral accepted		
Yes	19	61
not applicable	8	26
No	3	10
Missing	1	3

Note. Due to rounding errors, percentages may not equal 100%.

Table 4

Subset Frequency Table for Variables for People who Responded “Yes” to OKQ

Variable	<i>N</i>	<i>%</i>
Taking Folic Acid		
No	6	86
Yes	1	14
Missing	0	0
Preconception appointment in last 12 months		
No	6	86
Yes	1	14
Missing	0	0
Well woman exam in last 12 months		
No	4	57
Yes	3	43
Missing	0	0
Well woman offered		
No	3	43
Yes	4	57
Missing	0	0
Well woman accepted		
not applicable	3	43
Yes	4	57
Missing	0	0
Preconception offered		
No	1	14
Yes	6	86
Missing	0	0
Preconception Accepted		
not applicable	1	14
Yes	6	86
Missing	0	0

Note. Due to rounding errors, percentages may not equal 100%.

Table 5

Subset Frequency Table for Variables for People who Responded “Okay either way” to OKQ

Variable	<i>n</i>	%
Taking folic acid		
No	6	100
Missing	0	0
Preconception appointment in last 12m		
Yes	1	17
No	5	83
Missing	0	0
Birth control method		
None	5	83
Condoms	1	17
Missing	0	0
Well woman in last 12m		
No	3	50
Yes	3	50
Missing	0	0
General reproductive care referral offered		
Yes	6	100
Missing	0	0
General reproductive care accepted		
Yes	6	100
Missing	0	0
Well woman exam offered		
Yes	3	50
No	3	50
Missing	0	0
Well woman exam accepted		
Yes	3	50
not applicable	3	50
Missing	0	0

Note. Due to rounding errors, percentages may not equal 100%.

Table 6

Frequency Table for Nominal Variables

Variable	<i>n</i>	%
Appointment type		
Well Woman	44	53
Contraception	21	25
Other	4	5
General Reproductive Health	6	7
Preconception	8	10
Missing	0	0
Group		
Accepted	79	95
Declined	4	5
Missing	0	0

Note. Due to rounding errors, percentages may not equal 100%.

Table 7

Frequency Table for Ratings of the Interpersonal Quality of Care Items

Variable	enough information	listened to	respected	taken seriously
Rating				
Excellent	51 (94%)	48 (89%)	49 (91%)	50 (93%)
Very Good	3 (6%)	5 (9%)	4 (7%)	4 (7%)
Good	0 (0%)	1 (2%)	1 (2%)	0 (0%)
Fair	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Poor	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Missing	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Note. Due to rounding errors, column wise percentages may not equal 100%.

Figures

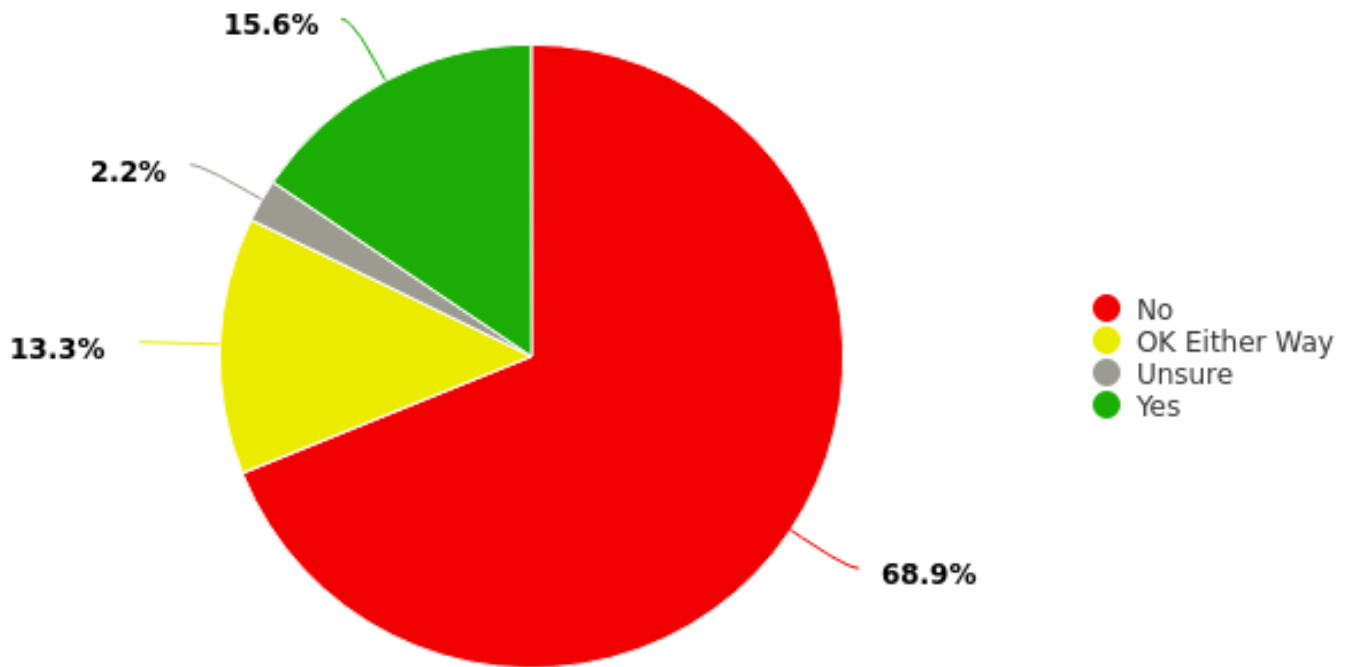


Figure 1. The pie chart depicts a summary of responses to One Key Question®

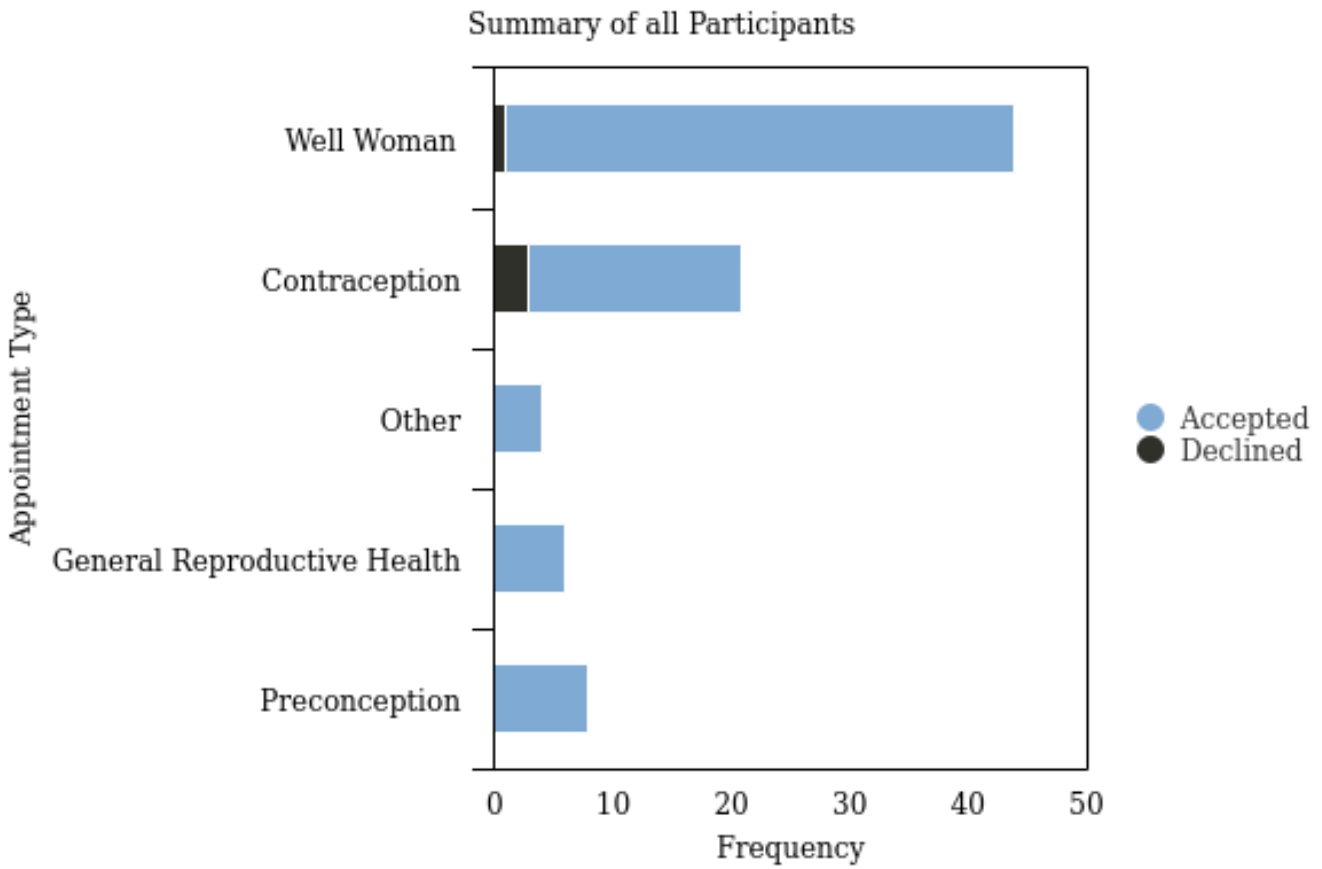


Figure 2. The stacked bar plot depicts referral types made. Referrals accepted are represented in blue. Referrals declined are represented in black.

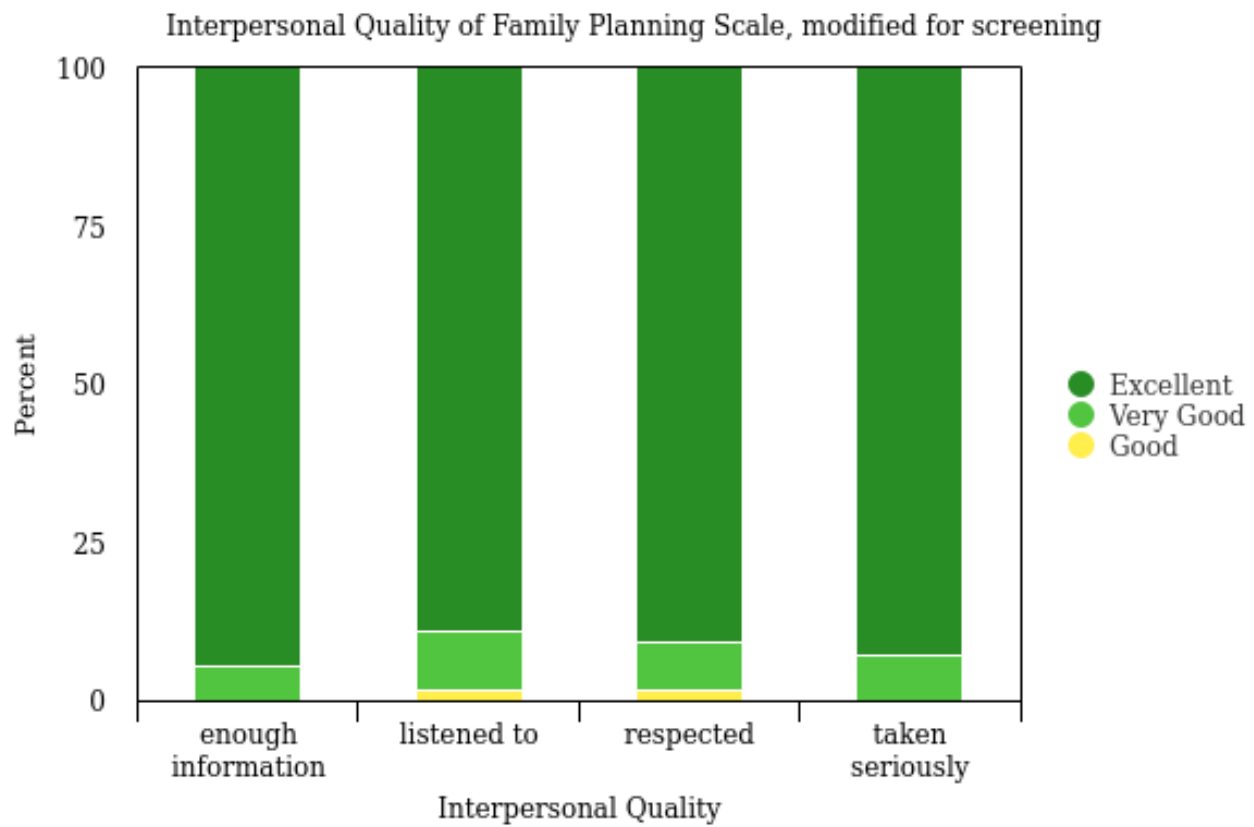


Figure 3. The stacked bar plot depicts the client experience of care scores using an adaptation of the IQFP Scale developed by Dehlendorf.