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Long-Acting Reversible Contraception Education for Street-Involved Youth: Impact on Knowledge, Attitudes, and Behaviors

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Abstract

Despite evidence that long-acting reversible contraception (LARC) is safe, appropriate, and highly efficacious for people under age 25, this younger population is under-represented among LARC users in the US. At the Orion Clinic in Seattle, Kaiser Permanente offers primary care to street-involved young people between the ages of 12 and 24. Since opening in 2016, young patients at the Orion Clinic have initiated LARC at low rates, which reflects national trends. The aims of this project are to understand the reasons for this population's underuse of highly effective contraceptive methods; to increase participants' knowledge and positive attitudes toward LARC; and to increase LARC use rates. The quality improvement project entails an educational intervention and a pre- and post-test with quantitative and qualitative elements. Results showed that participants' priorities when choosing contraceptive methods were safety, efficacy, and side effects. Baseline knowledge about LARC was low and a significant increase was noted after the intervention. Knowledge of LARC was positively correlated with interest in using LARC, but changes in interest were not significant. Any change in rates of LARC use at the Clinic could not be assessed due to limited available data. *Key words*: LARC, long-acting reversible contraception, IUD, intrauterine device, contraceptive implant, barriers, contraceptive priorities, LARC knowledge, LARC attitudes, young adults, adolescents, homelessness, low-income

Long-Acting Reversible Contraception Education for Street-Involved Youth: Impact on Knowledge, Attitudes, and Behaviors

Problem Statement

Despite evidence that long-acting reversible contraception (LARC) is safe, appropriate, and highly efficacious for people under age 25, this younger population is under-represented among LARC users in the US. At the Orion Clinic (henceforth referred to as the Clinic) near downtown Seattle, people aged 12 – 25 who are experiencing homelessness can access LARC for free. But in 2019, out of 229 patients who maintained a primary care provider at the Clinic and more who received drop-in care, just three LARC methods were placed at the Clinic (A. Sulladmath, personal communication, October 28, 2020). Funding that could have supported additional LARC, including covering costs for underinsured patients, went unused. Clinic staff aimed to increase interest in LARC and use of LARC among Clinic patients and indicated that limited clinician time was the main barrier to this initiative (J. Hoock, personal communication, August 26, 2019). Data have not been collected regarding Clinic patients' contraceptive priorities, knowledge of LARC, or attitudes toward LARC.

Background

Unintended Pregnancy

Unintended pregnancy is common among young people, especially in marginalized groups. LARC and other effective contraceptive methods reduce the risk of unintended pregnancy and its sequelae. In 2011, the most recent year for which comprehensive U.S. analyses have been completed, 4.1% of females 15 – 19 years old and 8.1% of females 20 – 24 years old experienced an unintended pregnancy (Finer & Zolna, 2011). Of all pregnancies in those age groups, 75% and 59% were unintended, respectively. Black race and income below or near the federal poverty line were associated with significant increases in these rates. Graduation from college and current marriage were associated

with significant decreases (Finer & Zolna, 2011). Unintended pregnancies are correlated with decreased maternal mental health, decreased maternal education, and decreased maternal income. All pregnancies carry risks of parent and fetal morbidity and mortality (Gipson et al., 2008; Diaz & Fiel, 2016).

Long-Acting Reversible Contraception: Definitions and History

In the US, LARC is available in the form of intrauterine devices (IUDs) and contraceptive implants. All forms of LARC are typically inserted at a single outpatient office visit and all require no further action by the user. They can also be removed by a healthcare provider at an office visit at any time. All LARC provide contraceptive coverage for at least three years and some are effective for up to twelve years. While some LARC methods contain hormones, none contains estrogen, meaning that the side effects are fewer than with oral contraceptives.

IUDs may be hormonal or non-hormonal; the unique components are levonorgestrel (a progestin or synthetic form of progesterone) and copper, respectively. These components add efficacy to the presence of a foreign body in the uterus, which in itself provides some contraceptive efficacy. The first commercial IUDs were introduced to the United States in the 1950s and the FDA first approved an IUD in 1970. There are four brands of hormonal IUDs currently available in the US, providing effective contraception for three to seven years of use depending on the brand (Kaiser Family Foundation, 2020). Mirena®, the hormonal IUD option offered by the Clinic, is FDA-approved for five years of use and evidence-based for seven years. Paragard®, the only copper IUD available in the US, is also available at the Clinic. Paragard® was introduced in 1988 and is the only non-hormonal form of LARC. It is FDA approved for ten years of use and evidence-based for at least twelve years (Kaiser Family Foundation, 2020).

Contraceptive implants were first introduced in the United States in 1990. They prevent

pregnancy by slowly releasing the hormone etonorgestrel, which, like the levonorgestrel in IUDs, is a progestin. Nexplanon®, the only implant currently available in the US, is FDA-approved for 3 years of use and evidence-based for 5 years (Kaiser Family Foundation, 2019). It is also available at the Clinic.

The efficacy of LARC for preventing pregnancy is similar to that of tubal ligation and is much higher than the efficacy of other reversible methods such as condom use or oral contraceptives. Additionally, LARC increases the median duration of contraceptive adherence as compared with shorter-acting methods. Due to both efficacy and duration of use, LARC results in significantly fewer pregnancies in young people compared to any other reversible contraceptive method (Simmons et al., 2019).

For many years most healthcare providers would offer IUDs only to people who were both married (which was used as a proxy for sexual monogamy) and parous (having given birth at least once, in contrast with “nulliparous” or never having given birth). Indeed, when Paragard® and Mirena® were introduced, both were initially FDA-approved only in parous persons (Kaiser Family Foundation, 2020). These common restrictions meant that IUDs were rarely available to young people. Today, all types of IUDs are well-established as safe and efficacious in young and nulliparous people, including those who have multiple sexual partners. The same is true for the contraceptive implant. LARC is recommended as a first-line contraceptive method for people of all ages by the American College of Obstetrics and Gynecology (2012) and as first-line in adolescents by the American Academy of Pediatrics (2014). For young people, LARC is recommended over other methods due to its high efficacy, ease of use, and safety profile (American College of Obstetrics and Gynecology, 2012; Ott & Sucato, 2014).

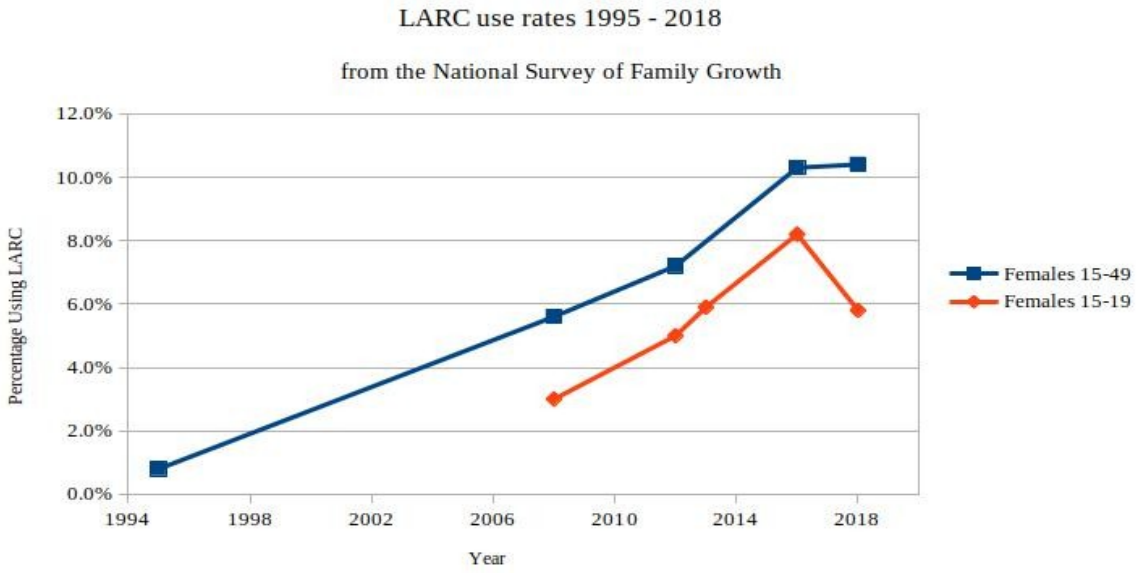
LARC Use Today

Over the last 25 years, as LARC has become increasingly available and familiar, its use has

skyrocketed among the general population and among young people specifically. The Centers for Disease Control's National Survey of Family Growth (NSFG) is a recurring survey which describes contraceptive use among U.S. females aged 15 – 45. From 1995 to 2010, that survey saw IUD use rise from 0.8% to 5.6% of those surveyed, a 700% increase (Jones et al., 2012). Use among adolescents has also grown dramatically: adolescents' LARC use increased by more than 1,000% between 2005 and 2013 (Romero et al., 2015). However, adolescents' use rates were initially lower, and have never caught up to use rates among older people. Prior to 2006, the NSFG found that adolescents' rates of LARC use were too low to reliably track. In the time period between 2006 – 2010, 2.5% of sexually active females aged 15 – 19 surveyed had ever used the IUD, and 0.6% had ever used used implants (Abma & Martinez, 2017). By 2011 – 2015, 5.9% of that population had ever used a LARC (Abma & Martinez, 2017). By 2015 – 2017, 20% had ever used LARC, and 8.2% were using LARC at the time of the survey (Daniels & Abma, 2018). In 2017 – 2019, the LARC use rate among sexually active females aged 15 – 19 had declined to 5.8% (Daniels & Abma, 2020). Figure 1 shows LARC use rates among adolescents and the broader population (Abma & Martinez, 2017; Daniels & Abma, 2018, Daniels & Abma, 2020; Jones et al., 2012).

Figure 1

LARC Use Rates 1995 – 2018



Despite this overall trend of growth, LARC remains one of the lesser used methods among U.S. adolescents. Adolescents' three most frequently used methods are condoms (often along with another method), withdrawal, and birth control pills (Daniels & Abma, 2020; Martinez & Abma, 2020). Adolescents still use LARC at significantly lower rates than older people. The NSFG's most recent LARC use rates for females in their twenties and thirties (13.7% and 12.7%, respectively) were more than double rates for adolescents (5.8%). The category of females 20 – 29 was not further stratified by age, so any difference in rates between people in their early and late twenties could not be assessed (Daniels & Abma, 2020; Martinez & Abma, 2020). In contrast to the recent decline in adolescents' LARC use, use rates for females in their twenties and thirties remained steady from 2015 to 2019 (Abma & Martinez, 2017; Daniels & Abma, 2018; Daniels & Abma, 2020). Lower rates of adolescents

using LARC meant less contraceptive coverage among that population.

A majority of the recent increase in LARC use has been driven by increased usage of IUDs rather than the contraceptive implant (Kavanaugh, 2015). One urban center found that patients selected IUDs more than four times as frequently as implants. However, among patients under age 24, IUDs were chosen only about twice as often (Ricciotti et al, 2015). Some data show that adolescents choose the contraceptive implant at even higher rates than they choose the IUD. In data gathered between 2011–2015, adolescents' implant use rates surpassed their IUD use for the first time, with 3.0% having ever used an implant and 2.8% having used an IUD (Abma & Martinez, 2017). That trend toward implants has continued: a 2020 analysis of NSFG data by Martinez & Abma found that 15% of sexually active females aged 15 – 19 had ever used an implant, accounting for the majority of the 20% who had used any LARC. In another study where all contraceptive options were provided cost-free, patients aged 14 – 17 chose the implant at higher rates than they chose IUD, whereas patients aged 18 – 20 chose the IUD at higher rates (Mestad et al, 2011).

Washington state's Title X programs serve a predominately low-income population; therefore, in some ways represent a similar population to patients at the Clinic. In 2018, a relatively high 17% of females aged 15-44 in these programs used LARC for contraception (Washington State Profile, 2018). However, these Title X data were not stratified by age. Based on other studies, people under 25 are likely to be under-represented in the 17% who used LARC.

LARC Knowledge and Attitudes among Young People

Both lack of knowledge of LARC and misconceptions about LARC remain common. Studies show that half or fewer of adolescents and/or young adult females have heard of the contraceptive implant at all (Bachorik et al., 2014; Hoopes et al., 2016). Even those who are familiar may not have an accurate picture of what LARC can offer. Bachorik et al. (2014) found those who had heard of the

implant did no better on a knowledge quiz than those who had never heard of it. Only about half of females aged 10 – 24 correctly identified that the contraceptive implant is safe for people who have never given birth. A similar number knew that it does not require daily action and does not affect future fertility (Bachorik et al., 2014). Hoopes et al. (2016) found that about 70% of Seattle students aged 14 – 19 had heard of any LARC method. Nonwhite students reported less accurate information about LARC than white students (Hoopes et al., 2016).

History of unintended pregnancy was correlated with a more negative attitude toward the contraceptive implant in one study, and with lower rates of choosing the implant in another (Bachorik et al., 2014; Mestad et al., 2011). However, those with a history of unintended pregnancy chose a LARC method—usually an IUD—at higher rates overall, indicating that the decreased interest in the implant may primarily reflect an increased interest in the IUD (Bachorik et al., 2014; Mestad et al., 2011). A history of vaginal intercourse is the strongest predictor of LARC acceptability (Hoopes et al., 2016; Whitaker et al., 2008). Two studies found no differences in LARC acceptability or utilization rates by age, race, or ethnicity, while another study showed a slight increase in preference for LARC among Black adolescents as compared with white adolescents (Ricciotti et al, 2015; Bachorik et al., 2014, Mestad et al., 2011).

LARC Counseling and Education

Education is effective at increasing interest in LARC and use of LARC. Among 14 – 24-year-old females, positive attitudes toward the IUD jumped significantly from 38% to 54% after a three-minute educational intervention (Whitaker et al., 2008). In another study where any method of contraception was provided at no cost after brief LARC education, young participants chose LARC at high rates: 69% of those aged 14 – 17 and 61% of those aged 18 – 20 chose LARC (McNicholas et al, 2014).

Across studies, populations, and regions, irregular bleeding was the most common reason given for removal of both IUDs and implants. After bleeding, the next most common reason for removal of LARC was a combination of side effects, for example bleeding along with mood changes and weight gain (Hoggart et al., 2013; Sznajder et al., 2017; Obijuru et al, 2016; Aoun et al., 2016). Hoggart et al. (2013) found that young patients were unhappy with the content of their counseling prior to initiation of the implant. These patients later perceived that providers denied the occurrence of LARC-related symptoms they experienced or minimized the importance of these distressing side effects. Side effects are clearly significant factors for many young people and discussing side effects up front may hold value for young patients.

LARC Satisfaction

McNicholas et al.'s analysis (2014) of a longitudinal study of more than 10,000 females aged 14-45 showed that LARC had higher continuation and satisfaction rates than any other methods. Among study participants aged 14 – 19, 82% had continued their LARC method at one year and 67% at two years. These rates were nearly double the group's continuation rates of non-LARC methods, which were just 49% at one year and 37% at two years. Nulliparity was not associated with any change in LARC continuation rates. Hormonal IUDs were continued at the highest rates, followed by the copper IUD and then the implant. Regarding patient satisfaction, both types of IUDs had the highest individual satisfaction rates (McNicholas et al., 2014). LARC's satisfaction rates were 87% at one year, as compared with an average of 69% for other methods (Peipert et al., 2010).

LARC is compatible with transgender identities or hormone therapies. LARC methods may be appealing to transmasculine people for several reasons: all forms of LARC lack feminizing estrogen, the copper IUD is entirely hormone-free, and progestin-based methods often reduce or eliminate menstrual periods.

People who have experienced abuse discontinue contraception sooner than people who have not, but LARC is more tolerable than other methods of contraception (Allsworth et al., 2013) This research provides valuable guidance for contraceptive counseling for the Clinic's population, a large proportion of whom have experienced trauma and unstable home lives (YouthCare, 2020).

In a qualitative study of young females, Higgens et al. (2016) found that nonwhite participants had lower trust of providers regarding LARC counseling. Both white and nonwhite participants agreed that providers would be more likely to recommend LARC to nonwhite patients, often alluding to historical trends of forced birth control or sterilization of nonwhites. Authors of this study recommended that people providing contraceptive counseling acknowledge racial biases and historical aggressions related to birth control.

The Orion Clinic

The Clinic provides Paragard® copper IUD, Mirena® levonorgestrel IUD, and Nexplanon® etonorgestrel implant. No data has been formally collected at the Clinic on overall LARC use rates, patients' contraceptive preferences, or barriers to use. In 2019, the Clinic placed three LARC methods for their patients: 2 Nexplanon® and 1 Paragard®. However, since youth often receive care from multiple health systems, it is possible that patients initiated LARC elsewhere without the Clinic's knowledge. Clinicians' opinions varied regarding prevalence of LARC use and familiarity with LARC among the patient population. In communications throughout 2020, one clinician expressed that many youth may not be aware of LARC methods, while another believed that half or more of eligible patients may already have had LARC in place. The Clinic Director expressed that increasing LARC use among the patient population is one of the Clinic's goals for the next few years.

Methods

Project Design and Aims

This was a quality improvement project with a pre-/post-test design. The intervention consisted of a brief educational discussion about LARC between the author and each participant, with pre- and post-surveys administered on the same day as the intervention. The primary aims of the project were to increase knowledge of LARC and foster positive attitudes toward LARC among participants. A secondary aim was to increase placement of LARC at the project site. Finally, the project also aimed to understand and provide data on participants' current contraceptive priorities, LARC use patterns, and barriers to LARC use.

Setting

This project is primarily sited at the Clinic, located within YouthCare's Orion Center near downtown Seattle. YouthCare is a social services organization serving people aged 12 – 25 experiencing housing instability. Since 1984, YouthCare's Orion Center has operated as a drop-in center for street-involved youth and young adults. Many services are offered on site, including overnight shelter, meals, case management, chemical dependency counseling, sexual assault resources, and GED classes. The Clinic opened on site in 2016. Primary care is provided by Kaiser Permanente's Family Medicine Residency. Patients are seen at no cost to themselves, regardless of their insurance coverage. Anyone receiving services from YouthCare is eligible to be a patient at the Clinic.

The Orion Center normally serves as both a daytime drop-in center for people aged 12 – 25 and a nighttime shelter for people aged 18 – 25, with nightly sign-ups for beds. During the COVID-19 pandemic; however, the Orion Center has changed its operations to become a 24-hour shelter for a consistent group of about a dozen clients. Two other YouthCare service sites served as secondary project sites. These included a space in South Seattle that serves as both a drop-in center and an

overnight shelter as well as a North Seattle drop-in center. According to YouthCare staff, the South Seattle location serves a higher proportion of clients of color than YouthCare's other locations. This location, like the main project site, operated with COVID-19 restrictions at the time of the project, limiting the number of clients present. In contrast, the North Seattle site continued to operate as an open-door drop-in center during the COVID-19 pandemic.

Participants

Potential participants for this project included anyone eligible to receive care from the Clinic. As noted, this entailed two restrictions: age 12 – 25 (although virtually no youth under age 15 access the Clinic) and accessing YouthCare services (i.e., one or more of drop-in services, shelter services, case management, and transitional housing).

The author was unable to obtain demographics for the Clinic's patient population specifically; data from YouthCare's housing and employment programs were used as the best available proxy. The plurality of people served by YouthCare identify as Black (29%), Multiracial (25%), or White (24%), while 16% identify as Hispanic or Latinx. Smaller numbers identify as American Indian/Alaska Native (2%), Asian (2%) and Hawaiian/Pacific Islander (2%). Twenty-seven percent of those served identified as LGBTQ+, and 7% identified as transgender or gender nonconforming (YouthCare, 2020).

Non-English language speakers were effectively excluded from the project as the surveys were prepared only in English. Neither sex at birth nor gender identity were used as exclusion criteria, meaning that people without uteruses were among eligible study participants. This choice was made in alignment with the project's primary goals of increasing the population's overall knowledge of and favorable attitudes toward LARC. Speaking to people without regard to anatomy also allowed this project to reach more participants during a time when the COVID-19 pandemic limited the number of clients passing through YouthCare's shelters and drop-in centers.

Theoretical Framework

The project design was guided by the Theory of Planned Behavior, which names attitudes, subjective norms, and perceived power as the most important elements in determining behavior (Azjen, 1991). This project aimed to influence participants' attitudes towards LARC by providing information and reinforcing their sense of autonomy in choosing contraception. The intervention more minimally attempted to change perceived norms, as well as to gather data on current norms among the project's population.

Additionally, the intervention and questionnaires were shaped by principles of Trauma-Informed Care. The author recognizes that housing instability, an experience shared by all project participants, is itself a trauma. Additionally, most members of this project's population have had multiple traumas in their past. Forty-one percent YouthCare's clients reported interpersonal violence as a barrier to stability, and 90% of homeless youth reported family conflict in the home (YouthCare, 2020). Encounters with healthcare providers have the potential to be traumatic, even more so when highly personal topics such as sex and contraceptive choices are discussed. Contraception has repeatedly been used in the United States as an oppressive tool to limit both the fertility and the options of non-white people, most commonly Black Americans, as well as homeless and low-income people. Care must be taken to avoid coercive or antagonistic relationships with patients and respect must be given toward their choice of contraceptive method, including no method.

In order to effectively establish rapport with participants and avoid causing further harm, the author attempted to minimize assumptions made about participants (such as in survey language) and to maximize choice and autonomy in their engagement with the project. These choices were intended to help participants see themselves as equal participants in the project, and avoid perceptions of coercion, judgment, or a lack of safety.

Institutional Review Board and Informed Consent

This project was submitted to Seattle University Institutional Review Board for review and was determined to be "Not Human Subjects Research" and, thus, exempt from review. Informed consent to participate, including explanation of the option to withdraw at any time without penalty, was obtained from all project participants prior to starting the pre-intervention survey. All potential participants were of age to make independent decisions about their reproductive healthcare. Thus, the Clinic deemed consent of any minor participants' guardians to be unnecessary. See Appendix A for a copy of the informed consent statement received by potential participants.

Recruitment

Project participants were primarily recruited by same-day verbal invitation at a project site. A general announcement was made inviting all clients present to participate in the project. Additionally, the author introduced herself individually to all clients at the sites and indicated how to participate in the project if desired. The author made four visits to the primary project site, two to the South Seattle site, and two to the North Seattle site. If any patients arrived at the Clinic while the author was at the primary project site, Clinic staff also described the project and referred interested parties to the author. Finally, YouthCare case managers were informed of this project and were asked to refer any of their clients who expressed interest. No referrals resulted from this last method of recruitment.

Across all the above recruitment methods, clients were made aware of the small incentive (a $5 Starbucks gift card) provided to acknowledge their time spent on the project. These gift cards were provided by YouthCare and offered at the recommendation of Clinic staff. This offer was consistent with YouthCare's frequent provision of low-denomination gift cards in recognition of clients' working toward goals or participating in certain events. As such, the offer of a gift card did not represent an unusual or potentially coercive incentive to participate in the project.

Intervention

The intervention consisted of one-on-one individualized educational discussions about LARC lasting about 15 minutes. A core set of facts pertaining to questions on the surveys was shared in all discussions. Additional topics were addressed based on participants' responses to the pre-survey and on their verbally expressed interests. See Appendix C for an outline of discussion topics. Safety and efficacy were the primary discussion points, selected based on research about adolescents' priorities and concerns regarding contraception. A Centers for Disease Control comparison chart of contraceptive effectiveness was used as a visual aid in discussing efficacy (See Appendix B). Additional components of the education included appropriateness for young and nulliparous persons, privacy of method, duration of effectiveness, common side effects, return to fertility, and satisfaction and continuation rates. Models of each type of LARC (hormonal IUD, copper IUD, and implant) were available for participants to explore in hopes of both fostering engagement with the session and further increasing participants' comfort with the methods. Mechanism of action, potential mitigation of side effects, and cost were addressed very briefly in all visits or more in-depth when individual participants expressed interest. Use in transmasculine people was addressed if participants expressed interest.

Clinic staff gave input on the content of counseling based on their knowledge of healthcare needs for the population (e.g., STI prevention), the population's interests and knowledge level, and successful methods of engagement. The Center's direct service staff, such as case managers and drop-in supervisors, were asked to provide input, but no feedback was received. Although Clinic clients were not involved in the project planning process, each individual participant did partially direct the content of their education during the intervention.

Only LARC methods of contraception were discussed during the brief intervention, but resources regarding all contraceptive methods were offered to participants. Pamphlets provided by the

Clinic about contraception and STI prevention were displayed in the meeting room and offered after the intervention. One-page fact sheets printed from ReproductiveAccess.org regarding each LARC method were also made available (See Appendix D for a sample fact sheet). Additionally, participants could opt-in to send themselves a text message containing links to three online resources which provide information on all birth control methods: Bedsider.org, Kaiser Permanente, and Planned Parenthood.

Data Collection and Instruments

All participant-facing interventions and data collection occurred in one single episode, in order to minimize the risk of participants being "lost to follow up." This common problem of participant attrition is likely to be worsened in both young populations and people experiencing housing instability. Each episode comprising informed consent, initial data collection, intervention, and post-intervention data collection lasted between 20 and 40 minutes. Participants could choose to complete the pre- and post-surveys online on a provided laptop or to answer verbally as the author read questions aloud with the author serving as scribe. This auditory option was offered in order to allow people to participate regardless of literacy status or comfort with technology. Participants met with the author in a private room for discretion and to minimize distractions. Participants chose where they would like to sit and whether to close the door to the room. These choices were offered in hopes of maximizing participants' feelings of safety, which might increase their engagement with the project and comfort with healthcare workers.

De-identified electronic health record data was used to measure the secondary outcome of increasing LARC placement at the clinic. The author obtained LARC initiation numbers and all-contraceptive initiation numbers for the time frame of the project, plus the eight weeks immediately following its completion. These figures were compared with data from the time period exactly one year prior. The total number of patients served during each of these time frames was not available, so LARC

placements were compared as simple numbers rather than as calculated use rates.

Pre-and post-intervention surveys were administered via Qualtrics on a provided laptop. The surveys were designed in collaboration with the Clinic to accurately reflect project aims. The surveys were designed using input from a 2008 study about IUD knowledge and acceptability (Whitaker et al.), as well as two subsequent studies that adapted Whitaker et al.'s questions and scales (Hoopes et al., 2016; Bachorik et al., 2014). Three test readers from Seattle University and two physicians from the Clinic provided feedback on the surveys' face validity, with particular attention to use of language that would be developmentally, socially, and culturally appropriate for the population. The pre-survey includes demographic information, questions about current contraceptive usage and priorities, knowledge of LARC, and attitudes toward and interest in LARC. The post-intervention survey consisted of the same questions as the pre-survey, except for the demographic information. All questions were optional, again in order to maximize participants' comfort and autonomy. Refer to Appendices E and F for full text of surveys.

Analysis

Quantitative assessment of this program was accomplished by analyzing data gathered from participants via the surveys, as well as aggregate patient data from the clinic. Pre- and post-survey interest in LARC and self-rated knowledge of LARC were measured with ten-point Likert-type scales. Knowledge of LARC was also measured with true/false questions. Descriptive statistics were used to show the baseline and post-intervention characteristics of the populations as a whole. Numerical data was analyzed with paired T-tests in LibreOffice Calc to measure magnitude and significance of any changes. Significance was calculated using a one-tailed p-value of <0.05, unless otherwise noted.

The brief free-writing answers from the survey were coded for themes by the author and reviewed by two additional readers. Answers were assigned a minimum of one theme, without

maximum. Frequency of themes pre- and post-survey were compared using descriptive statistics.

Rates of LARC placement per patient visit during the pre- and post-study time periods were compared as raw data, since data needed for more detailed analysis were not available.

Results

Participant Demographics

Of the 14 people presented with the informed consent statement for this project, 13 elected to participate (92%). Nine participants were encountered at the main project site, four participants at the North Seattle site, and one at the South Seattle site. Participants ranged from 18 and 24 years of age, with a median age of 21. Six youth (46%) self-identified as white, three (23%) as Black, one (8%) as Hispanic/Latinx, one (8%) as American Indian/Alaska Native, and two (15%) as multiple races or ethnicities: one white and Hispanic, and one white and Black. No participants identified as Asian/Pacific Islander or wrote in other races. Six participants identified their gender as female (46%) and seven as male (54%). No participants reported non-binary gender or other genders. Seven participants (54%) indicated that their sex at birth was female, and six (46%) indicated sex at birth as male. Three participants (23%) reported a sex at birth discordant from their gender identity.

Current, ideal, and past contraceptive methods

Two participants had used an IUD for contraception and one had also used an implant. Both participants were white cisgender females. Eleven out of thirteen participants (85%) indicated that they had never used an implant or IUD of any kind for contraception.

All participants reported a history of vaginal intercourse. Contraceptive methods used during last episode of vaginal intercourse were as follows: condoms: six respondents (46%); no contraception: four respondents (31%); “the shot” or Depo-Provera: two respondents (15%); withdrawal or “pulling out”: one respondent (8%); pills or patch: one respondent (8%); IUD: one respondent (8%); and implant: one respondent (8%). The above numbers total more than 13 because two respondents reported using multiple methods: one participant used condoms along with an IUD and one used condoms along with the shot and withdrawal method. One of six males (17%) reported using a method

other than condoms (i.e., a method obtained by the female partner) compared with four of seven females (57%).

In order to assess preferred contraceptive method, participants were asked “What is your ideal, or most preferred, form of birth control? (If you do not currently want/need birth control, think about what you would want if you did need birth control.)” Participants’ preferred contraceptive methods differed from their reported use. Prior to the intervention, condoms were the most frequently preferred method, reported by 6 participants (46%). The shot and the vaginal ring were each preferred by two participants (15%). The IUD, withdrawal, and no method were each preferred by one participant (8%). After the intervention, the number of participants reporting an IUD as their preferred method had increased to four (31%). Five participants (38%) continued to prefer condoms. The contraceptive implant, the vaginal ring, withdrawal, and no method were each the preferred methods for one participant (8%). No participants mentioned pills or the patch as their preferred method either before or after the intervention. Three females selected a LARC method in the post-survey: one who was already using an IUD continued to prefer an IUD, and two changed their preferred method to the IUD (one from the shot and one from condoms). No females preferred the implant at any time. No males selected a LARC method as their preferred method in the pre-survey. Two males selected a LARC method post-survey: one changed from condoms to the implant; and one from NuvaRing to the IUD.

Objective Assessments of Knowledge

Participants’ knowledge of LARC was assessed with one multiple-choice question and three true/false questions. A lack of response was coded as an incorrect response. Prior to the intervention, four participants (31%) correctly named one or more LARC methods as the only two >99% effective reversible contraceptive methods, and no participants (0%) correctly named both IUDs and implants. After the intervention, nine participants (69%) named one or more of the correct methods. Of those

nine, seven (54%) answered exactly correctly, selecting only the two LARC methods. The change from zero to seven persons accurately selecting efficacious methods was highly statistically significant ($p<0.003$). Knowledge of STI protection, safety in nulliparous persons, and return to fertility after method discontinuation were each assessed with one true/false question. The number of participants correctly identifying that fertility can return immediately after LARC discontinuation increased from six (46%) to 11 (85%) after the intervention, a statistically significant change. The number of participants correctly identifying that no contraceptive method except for condoms protects against STIs increased from six (46%) to nine (69%) after the intervention. The number of participants correctly identifying that LARC is safe for nulliparous persons increased from six (46%) to eight (62%) after the intervention. Knowledge changes regarding STI protection and return to fertility were not statistically significant.

Participant Self Ratings: Knowledge and Interest

Both before and after the intervention, participants rated their knowledge of LARC methods from 0 (labeled “Never heard of them”) to 10 (labeled “I know all about them”). Pre-intervention responses ranged from 0 to 9, with a median response of 3 and a mean of 3.2. Post-intervention responses ranged from 2 to 10, with a median of 6 and a mean of 6.2. The increase in self-rated knowledge was highly significant ($p<0.00003$). Both male (by sex, not gender) and female subgroups showed statistically significant increases in self-rated knowledge, but females’ self-ratings increased from a mean of 3.0 to 7.3, while males’ self-ratings increased to a lesser degree, from 3.3 to 5.3.

Youth also rated their interest in using LARC from 0 (labeled “I definitely would not”) to 10 (labeled “I definitely want to”). Both before and after the intervention, the range of answers was 0-10, and the mode was 0. In the pre-intervention, the median was 0 and the mean was 2.5. Post-intervention, the median interest was 4, and the mean was 3.9. Among males, the median increased from 0 to 2 while

the mean remained similar at 2.7 and then 2.8. Self-rated interest across all participants and among males did not change significantly. However, among females, the median self-rated interest increased from 2 to 5 while the mean increased from 2.4 to 4.9, a statistically significant change.

Self-rated knowledge of LARC was significantly positively correlated with interest in LARC ($r = 0.51$, $p < 0.002$).

Qualitative Responses: Participant Priorities and Concerns

A total of eleven themes were identified across answers to the two qualitative questions, which asked respectively about priorities when choosing a birth control method and specific concerns about LARC. Four themes were found in responses to both questions: efficacy, safety, side effects, and trans-friendliness. In order of frequency, the seven themes appearing in responses about priorities were method efficacy, method safety, side effects, patient autonomy, ease of use, trans friendliness, and a desire for pregnancy (thus no desire for contraception). The frequency of these themes changed very little from the pre-survey to the post-survey. Table 1 shows a count of themes in participants' priorities.

Table 1

Priorities When Choosing Contraceptive Method

Themes	Number of participants noting priority			
	In pre-survey		In post-survey	
Method efficacy	4		4	
Method safety	3		3	
Side effects Predominant subthemes (may not sum to total)	3		3	
	Weight gain	1	Weight gain	0
	Mood changes	1	Mood changes	1
	Bleeding or cramping	1	Bleeding or cramping	1
Ease of use	2		2	
Patient autonomy	2		2	
Trans friendliness of method	1		1	
No desire for contraception	0		1	

The most commonly described priority when choosing a birth control method was efficacy, followed by ease of use and safety. Desire for efficacy was highlighted by four participants (31%) in such responses as “knowing that it works” or “I don’t want to get her pregnant.” Three participants (23%) mentioned safety as a priority (“no possible outcome of sickness/death/injury” and “I don’t want it to effect [sic] my health”). Three participants (23%) prioritized side effects (“weight, mood, and flow change”). Two participants (15%) prioritized ease of use (“don’t have to take every day”) and two (15%) prioritized individual autonomy (“choice on both sides” and “what will work for me”). One participant (8%) mentioned compatibility with a trans-masculine appearance and experience (“no feminizing effects/compatible with [testosterone]”).

In a second free-answer question, participants were asked what concerns they would have about using a LARC method or about a friend using one. The most common themes in responses were similar

to priorities. A total of eight themes were noted in the pre-survey: method safety, side effects, unnatural or foreign object, emotional discomfort with insertion procedure, patient lack of knowledge, trans-friendliness of method, and uncertainty about concerns. On the post-survey, “lack of knowledge” disappeared as a theme, and “no concerns” appeared as a new theme. Table 2 provides a complete count of themes in participant responses.

Table 2

Concerns That might Prevent LARC Use

Themes	Number of participants noting concern			
	In pre-survey		In post-survey	
Method safety Predominant subthemes (may not sum to total)	5		4	
	Malplacement or migration	1	Malplacement or migration	2
	Infection or damage to surrounding tissue	2	Infection or damage to surrounding tissue	1
Patient lack of knowledge	3		0	
Side effects Predominant subthemes (may not sum to total)	2		2	
	Mood	1	Mood	1
	Bleeding or cramping	1	Bleeding or cramping	2
Unnatural or foreign object	2		2	
Method efficacy	1		2	
Trans-friendliness of method	1		1	
Emotional discomfort with insertion procedure	1		2	
Uncertain or decline to answer	1		1	
No concerns	0		3	

Safety was the top concern about LARC, with five youth (38%) listing a safety concern about LARC before the intervention, and four (31%) afterwards. Safety concerns noted included that a method could be “not implanted right”, or that it might cause “permanent damage” or “cervical

cancer." Efficacy was a concern for two participants (15%) in the pre-survey and this number was unchanged after the educational intervention. One participant noted "My mom had [an] IUD and […] she got pregnant." Concern for side effects was noted in two responses (15%), specifically a worry about "cramping" and the past experience of a participant who "bled for 5 straight months when [she] got [an] IUD." The office visit required to insert LARC was a concern for two participants (15%). One trans man reported that the conversation and procedure "triggers [gender] dysphoria." Another participant reported she "[is] not shoving anything up [in her uterus]" nor "up [her] arm." This latter quotation also speaks to the theme of concern about having a foreign object in the body, or that the methods are "not natural." Two participants (15%) noted foreign bodies as a concern prior to the intervention, and one (8%) after.

LARC placements at the Clinic

In the fourth quarter (Q4) of 2019, the time period used for baseline data, two LARC—one implant and one copper IUD—were placed. In comparison, in Q4 of 2020 (i.e., during the intervention period and in the eight following weeks), one LARC, an implant, was placed. The total number of patients seen was not available; thus, rates of LARC placement and the significance of any change were not calculated. In Q4 of 2019, two out of three visits regarding contraception were for placement or surveillance of LARC (67%), while in Q4 of 2020, that proportion was two out of seven visits (28%).

The patient receiving the implant during the follow-up period was one of the project participants who chose to disclose their participation to the clinic. Additionally, one other project participant initiated a non-LARC method of contraception (the shot) during the follow-up period.

Discussion

As compared with YouthCare's overall clientele, notable differences in this small sample include overrepresentation of white persons (46% in sample and 29% in broader population) and under-representation of multiracial persons (15% and 25%). Transgender persons are over-represented in the sample (23% and 7%).

Two of the primary aims of the project, improving attitudes toward LARC and increasing initiation of LARC, were not met. However, among a subset of the population (females by sex), attitudes toward LARC did improve significantly. In contrast, the project aim of increasing LARC knowledge was clearly met. Within the broader category of knowledge, the domains of perceived knowledge and awareness of LARC's efficacy showed the greatest changes following this intervention.

Participants' priorities were essentially unchanged from pre-intervention to post-intervention. This indicates that the intervention generally did not change what youth *desire or value* in a contraceptive method. Participants' concerns about LARC also showed very little change, with one notable exception. Initially, 23% participants cited their own lack of knowledge as preventing them from choosing LARC. After the intervention, that number dropped to 0%, and 23% of youth stated that they had no concerns about LARC. The disappearance of lack of knowledge as a concern is consistent with quantitative data indicating that youth's confidence in their knowledge of LARC increased significantly.

The most frequent response that participants gave to indicate their level of interest in LARC, both pre- and post-intervention, was a 0 out of 10. These "0" answers may represent a lack of interest in LARC as compared with other contraceptive methods, but there are also other possibilities. Although all participants indicated that they had a history of vaginal intercourse, some participants' current sexual behavior may not carry a risk of pregnancy. Participants not having vaginal intercourse might

have indicated no interest in LARC due to a lack of need for contraception. One male participant's lack of interest in LARC appeared to be due to opposition to any form of contraception ("I would never prevent birth"). Two participants, one male and one female, who expressed 0 out 10 interest in using an IUD or implant simultaneously noted that their "most preferred" form of birth control was an IUD or implant. This last discrepancy points to a potential lack of internal validity of the survey. Although surveys were guided by tools used in previous studies, they were created for this project and were subjected only to readings for face validity.

Participants who were male by sex (n=6, 46%) may have perceived that some questions did not apply to them due to their sex. Questions such as "How interested are you in using an IUD or implant for birth control?" were intended to capture males who were interested in their partner obtaining LARC, as well as people who could use LARC in their own bodies. Results suggest that male participants understood themselves to be able to "use" any birth control method, including those used in female bodies only. This is demonstrated by the fact that all of the six male participants indicated at least one of the following: past use of a birth control method other than condoms or withdrawal, a method other than condoms or withdrawal as their ideal form of contraception, or >0 interest in using LARC for birth control. These responses indicate that males interpreted at least some of the questions as intended. Nonetheless, it is possible that some male participants may have viewed some questions as not applying to them due to their sex. Imprecise question wording is a potential confounding factor for the responses of male participants.

While ease of use was a high *priority* for participants, ease of use did not appear at all as a *concern* regarding LARC, either pre- or post-intervention. This suggests that participants see LARC methods as easy-to-use. Participants also valued efficacy highly, and post-intervention, participants demonstrated dramatic improvement in accurately naming IUDs and implants as the most effective

contraceptive methods. The two participants who reported efficacy-related concerns about LARC both cited a family member who became pregnant while using an implant or IUD. Their persistent concerns suggest that anecdotal evidence from personal contacts is an important influence on decision-making, perhaps outweighing statistical data.

Safety was another primary concern regarding LARC and these concerns generally persisted after the intervention. Some of the specific safety concerns noted are indeed possible complications of LARC, though rare (e.g., “risk of […] getting an infection in the arm”), while others are not supported by current evidence (e.g., “cervical cancer”).

“Natural-ness” of methods was not listed as a priority when choosing contraception by any youth, but it did come up as a concern when participants were asked to consider LARC use specifically. Based on a literature review, effects on fertility and pain at insertion were anticipated to be concerns, but these were not mentioned by any project participants.

Participants’ initial awareness of LARC’s efficacy was very low. Condoms were inaccurately named as the most effective forms of birth control by a high margin. Since efficacy is the highest-rated priority in this population, a continued focus on comparative efficacy of contraceptive methods lead to increased use of LARC. Additionally, increased knowledge about efficacy might increase use of other contraceptive methods that are more effective than condoms alone.

Pre-intervention, transgender participants were concerned about potential hormonal effects of contraception in general, including LARC specifically. However, post-intervention, they saw LARC as compatible with a gender transition and the use of other gender-affirming hormones. The only remaining concern post-intervention was the potential for a LARC insertion procedure to trigger gender dysphoria. Transgender youth have unique needs for information regarding LARC. Counseling about side effects and about the insertion procedures can help transgender youth decide whether LARC is

right for them.

While LARC placements at the Clinic were lower in the intervention period than in the baseline period (three LARC in Q4 of 2019 as compared with one LARC in Q4 of 2020), it was difficult to appropriately compare data from 2019 and 2020 in the context of the many changes caused by the COVID-19 pandemic and limited available data. For example, the numbers of individuals seen or office visits during the comparison time periods were not available. While the average number of weekly office visits at the Clinic rose from 2019 to 2020, clinicians subjectively reported a large decrease in the number of visits for purposes other than COVID-19 testing. Clinicians also reported a decrease in the number of individual patients in 2020. Due to these confounding factors, LARC placements were not compared on a per-patient or per-visit basis. Thus, conclusions were not drawn about LARC use rates at the Clinic.

Limitations

Due to the COVID-19 pandemic, during this project's implementation, both the Clinic and all YouthCare drop-in service locations were serving far fewer people than they would during a typical autumn. Thus, the pool of potential participants was smaller than expected. The small sample size means that the sample's statistical power was low. Low statistical power increases the risk of a Type II statistical error, meaning that real effects of the intervention may have failed to reach statistical significance in this sample.

Participants were selected by convenience sampling. While demographics of study participants appear grossly similar to those of YouthCare's overall client population, some seeming racial discrepancies not analyzed for significance were noted above. The increased prevalence of transgender persons in this sample might be due to different demographics at drop-in centers. There are also many factors which were not assessed in this project and which are not assessed by YouthCare. Clients with

certain characteristics may have self-excluded from the project, for example clients with higher or lower education levels, clients with traumatic histories with healthcare, and clients who already have strong opinions about LARC, to name a few subgroups. Any selection bias would produce data that do not apply to the entire population served by the Clinic.

The intervention provided to each participant was adapted to their interests. Thus, the discussions were not fully standardized. The differing content or words used in each intervention could cause variations in effect.

Follow-up data regarding LARC placements was tracked for only eight weeks after the intervention period, so possible longer-term behavioral effects were not assessed. Data from individuals was collected only on the day of the intervention, so the durability of knowledge and attitude changes was not assessed.

Attitudes toward LARC were assessed as a whole, rather than by type of LARC. This fact could have confounded answers from youth who feel very differently about different LARC methods, e.g., hormonal methods versus the copper IUD.

Implications for Practice

Participants in this project initially had low interest in using LARC, suggesting that there is not much, if any, unmet need for access to LARC. Rather than removing barriers to access, continuing to focus on building interest in LARC would likely be the most fruitful avenue toward increasing LARC use.

The results of the pre-intervention survey confirmed that there is a knowledge deficit regarding LARC in the study population and that knowledge increased after educational sessions. Some participants described their lack of knowledge as a barrier to choosing to use LARC and, after the intervention, that concern disappeared. Finally, analysis showed that, among this population, self-rated

knowledge of LARC significantly correlates with interest in LARC. Educational sessions effectively remove a knowledge barrier toward Clinic patients choosing LARC. Continuation of educational sessions is recommended in this population if increased interest in LARC and potential use of LARC are desired outcomes.

Results show that this group of street-involved young adults has similar priorities to previously studied groups of young people: safety, efficacy, and avoiding bothersome side effects. Clinicians should continue to focus on these domains when discussing birth control options with this population. Concerns about LARC's efficacy were reduced after the intervention. In contrast, safety concerns persisted after this educational intervention. Some safety concerns reflect small, but real risks of LARC use, while some other persistent concerns were not evidence-based. Clinicians should be aware that safety concerns may be the most entrenched barrier to LARC acceptance.

Young people or others who are willing to share their personal experience may be powerful influences on attitudes and behavior regarding contraceptive choices. Several participants inquired about the author's personal contraceptive choices and experiences. Coupled with participants' citing friends' experiences with LARC, this indicates that individuals' experiences and stories with birth control methods is a valued source of information to young people. Clinicians may wish to consider connecting patients with individuals who are willing to share their personal experiences with contraception. Online projects such as Bedsider.com, which was one of the resources offered to participants in this project, may be valuable resources for young people, despite the lack of personal connection.

Prevention of sexually transmitted infections (STIs) has been another priority for the Clinic. This project provides a point-in-time assessment of the population's knowledge and shows that there is room for more educational efforts in this domain. Before the intervention, just under half of

participants accurately identified condoms as the only contraceptive method to protect against STIs, and after the intervention, that number increased to 69%.

This project did not investigate whether perceived knowledge or self-rated interest correlate with increased use of LARC on an individual level. Another unknown is whether an educational intervention about LARC has any effect on the use of other contraceptive methods. Studies where data on contraceptive use is linked to individual survey participants (rather than de-identified, as it was in this project) with would be able to investigate the possibility of such effects. Studies with a larger sample size and longer follow-up could confirm or refute findings from this project.

The author is not aware of any current initiatives at the Clinic to continue LARC education outside of the setting of individual patient appointments. This paper and a brief summary of results and discussion points were provided to the Clinic, in hopes that the lessons learned in this project may help guide clinicians when counseling this population regarding contraceptives.

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Appendix A

Informed Consent Statement

What is this?
My name is Lizzie Simon, and I am a Doctor of Nursing Practice student at Seattle University. As part of my education, I'm doing this project called "Implementing LARC Education for Street-Involved Youth." (LARC is a type of birth control and stands for "long-acting reversible contraceptive").
With this project, I'm trying to see how patients of the Orion Clinic feel about certain methods of birth control, what they know, what methods they choose, and whether that changes after having an educational discussion.
Because you are a patient of the Orion Clinic or spend time at the Orion Center, I would like your help.

What is being asked of me?
I am asking you to spend about 25 minutes on this: 15 minutes listening to and discussing some information about birth control methods, plus another 10 minutes taking two surveys. You can ask questions at any time.

Is it risky to participate?
There are no known risks or dangers to participating in this project.

What do I get out of it?
You can receive a gift card (likely $5 to Starbucks) from the Orion Center if you meet with me and complete both surveys.
You might learn more about birth control options so that you can choose whatever is right for you. Participating could also improve other people's experience at the Orion Clinic, because the clinic might learn more about what patients want and need.

What about my privacy?
I will not record your name in any way. Only two people will ever see your answers to these surveys: me and my project advisor, Dr. Therry Eparwa from Seattle University. I will not tell anyone else about anything you say or write, unless I learn that you plan to hurt yourself or someone else.
Your survey answers will be kept securely secret by password protection.
The age, race, gender, and sex information I am requesting will not be used to identify you. In the paper I will write about this project, this information will only be shared about a group. (For example: "The average age of study participants was 21, and 80% of participants identified as women.")
I will ask if we can let the Orion Clinic staff know that we met, without sharing any other information. Doing this would help me and the clinic understand the effects of this project. This is optional.

Can I find out what happens?
Yes. A summary of the results of this project will be available for free from the Orion Clinic in March 2021. You can also contact me at any time at simone2@seattleu.edu to request results or a copy of my whole paper.

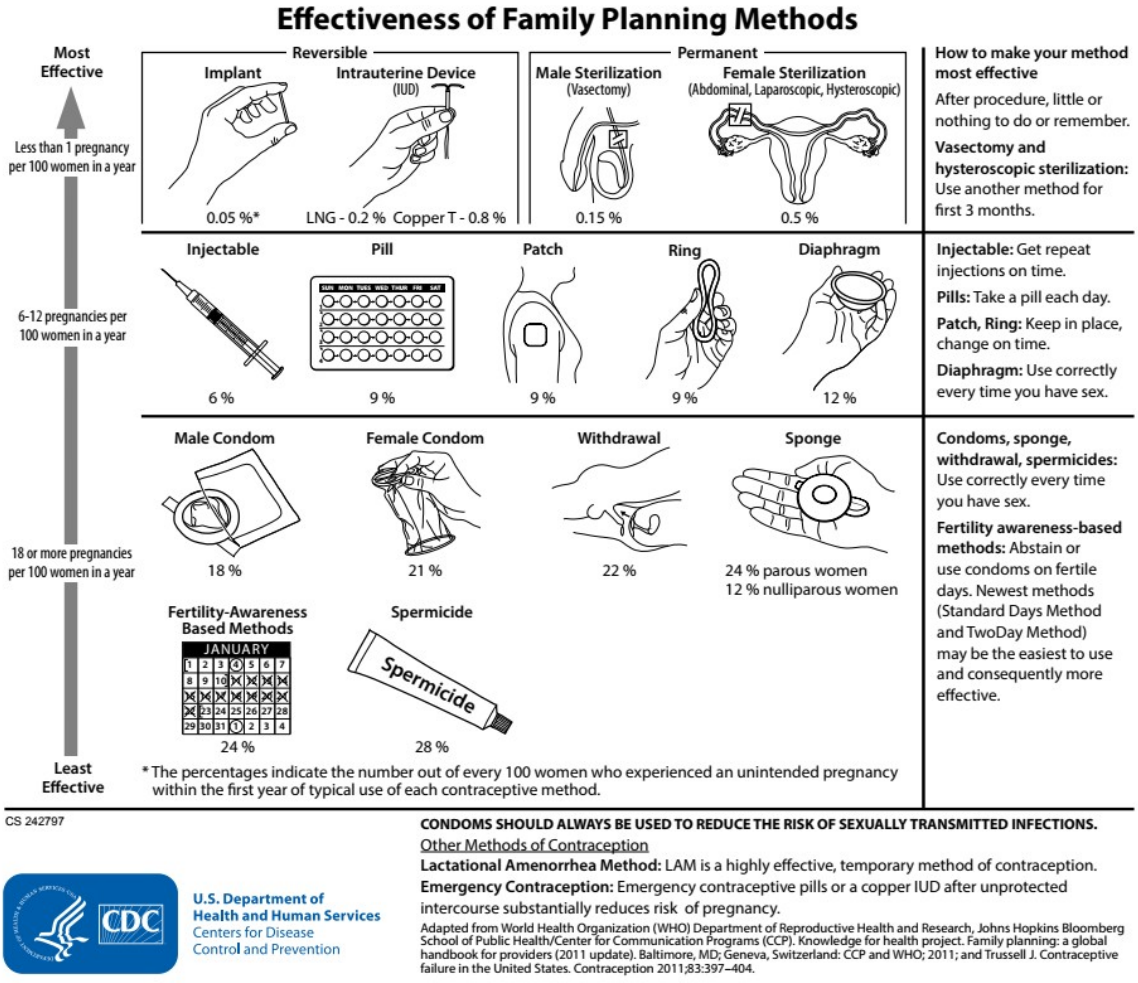
Do I have to do this?
No. Your participation in this project is totally up to you. You can stop at any time without any negative effects.

What if it doesn't feel right?
Please tell me (Lizzie Simon) anytime if you have concerns with this project. You can also talk to Orion Center or Clinic staff about any concerns.
If something comes up later, you can email me (Lizzie Simon), at simone2@seattleu.edu.
If you are concerned that your rights as a participant are being violated, you can contact Dr. Michael Spinetta, Chair of the Seattle University Institutional Review Board, at (206)296-5294 or mspinetta@seattleu.edu.

- I understand, and I agree to start participating in this project
- I don't want to be a part of this project
- I don't understand - I would like more information about what this means

Appendix B

Visual Aid in Discussing Efficacy



Appendix C

Outline of Educational Intervention

Adolescents' top concerns

Method effectiveness

Implants and IUDs are 99.2% – 99.95% effective at preventing pregnancy. Said another way, less than 1% of people using an implant or IUD will become pregnant in one year.

Show chart with # of pregnancies per 100 users, compare to pill and condoms specifically

Similar effectiveness to permanent methods, but reversible

Health and safety concerns

IUDs and implants are safe and appropriate for anyone with a uterus to use, including teenagers and people who have never given birth. The CDC, Planned Parenthood, gynecologists' associations, and pediatricians' associations recommend IUDs and implants as "first choice" birth control methods for teenagers.

Minimal risks of insertion - <1% of people have complications

There's old information out there about IUDs, especially, not being right for people until they have given birth. That isn't true.

Practicality of method use

"Set it and forget it" – one visit to get it placed, good for years, one visit to get it removed

Nothing to do during sex, nor on a daily/weekly/monthly basis

Maintaining privacy while using the method/Partner reception of the contraceptive method

A person's sex partner doesn't need to know they are using it and it would not be easy for them to discover. But, the person using an implant or IUD can check that it is still there, if they know what they are looking for.

Other issues

"Popularity" of these methods: continued use, acceptability, satisfaction

- Continuation rates at 2 years (~75%), compare to other methods (~40%)
  - specifically teen rates @ 2 years (67% / 37%)
- multiple studies find 70% - 80% of people are "happy" with these methods and/or would recommend them
- family planning providers choose LARC for self at much higher rates than general pop

STI protection

IUDs and implants provide none. Use condoms if not mutually tested negative and monogamous with partner.

Return to fertility

Some people have become pregnant within a week after removing an IUD or implant. It is difficult to measure whether everyone returns to fertility that quickly, but we do know that there is no long-term change or damage to fertility from using any kind of IUD or implant.

No conflict with testosterone as gender-affirming therapy

LNG IUD often stops periods, often recommended as top choice for trans men/people on T

For each method (briefly or longer according to patient interest):

Physical appearance (show models)
Method of insertion and removal
Mechanism of action (note no estrogen)
Duration of use
Common side effects (note that negative SE are treatable)
Address misconceptions if present

Cost - No cost from Orion Clinic no matter what, likely no cost many other places too, and if you have insurance it will cover it at no cost.

Reinforce patient's autonomy to choose own birth control method

Offer paper resources and/or to anonymously text these links to their phone

https://www.bedsider.org/methods
https://healthy.kaiserpermanente.org/health-wellness/birth-control/types
https://www.plannedparenthood.org/learn/birth-control

Appendix D

Implant Fact Sheet

FACT SHEET : PROGESTIN IMPLANT

Remember, the implant **does not protect you from Sexually Transmitted Infections or HIV.** Always use condoms to protect yourself!

HOW DOES THE IMPLANT WORK?

- The progestin implant is a thin plastic tube about the size of a paper matchstick. A health care provider inserts it under the skin of your upper arm.
- The implant releases progestin, a hormone like the ones your body makes. It works by making the mucus in your cervix too thick for sperm to pass through. If sperm cannot reach the egg, you cannot get pregnant.
- Each implant lasts up to 5 years.
- No method of birth control is 100% effective. The implant is over 99% effective.

HOW DO I USE THE IMPLANT?

- After numbing your skin, a health care provider inserts the implant under the skin of your upper arm. This takes a few minutes. It is done in the office or clinic.
- You should keep the wound clean and dry for at least 24 hours after you had the implant inserted.
- You should **use condoms as back-up during the first 7 days** after you get the implant.

HOW DOES THE IMPLANT HELP ME?

- The implant is safe and effective birth control. Once you have it, it works on its own – you don't have to do anything.
- You can use the implant while breastfeeding.
- You can use one implant for 5 years. If you want to use it longer, you can get a new implant after 5 years. If you don't like it or you decide to get pregnant, your health care provider can remove the implant before 5 years have passed.

HOW WILL I FEEL USING THE IMPLANT?

- The implant causes periods to change. **Most** people have off-and-on spotting. Spotting may last until you have the implant removed. This is normal.
- A **few** people have: mood changes, weight gain, headache, acne, and/or skin changes in the upper arm.
- Most side effects go away when you have the implant removed.

CAN PEOPLE SEE THE IMPLANT IN MY ARM?

- Most implants cannot be seen, but you can feel it if you touch the skin over the implant.

DOES THE IMPLANT HAVE RISKS?

- The implant is very safe.
- If you have any of the following symptoms **within the first week** after insertion, see your health care provider:
  - Redness, warmth, or drainage from your arm
  - Fever (>101ºF)
- If you have any of the following symptoms **at any time** while you have the implant, see your health care provider:
  - Feeling pregnant (breast pain, nausea)
  - Positive home pregnancy test

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Appendix E

Pre-intervention Survey

We'll start with a few questions about you. Again, this information will never be used to identify you.

What is your age today?

15-----16-----17-----18-----19-----20-----21-----22-----23-----24-----25

What is your racial identity? Select all that apply.

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic or Latinx
- ☐ Pacific Islander
- ☐ White or Caucasian
- ☐ Not described here [with text box for free text entry]

What is your gender identity today?

- ☐ Female
- ☐ Male
- ☐ Non-binary
- ☐ Not described here ____[free text entry]_____

What sex were you assigned at birth?

- ☐ Female
- ☐ Other/Intersex
- ☐ Male

Now, some questions to check on your knowledge about different methods of birth control (also known as contraception).
If you're not sure about an answer, don't worry, you're not being graded. Just give your best guess.

Which of these birth control methods is more than 99% effective?
In other words, which methods(s) would result in an average of 0 or 1 pregnancy if 100 people used it for 1 year?
Select all that you think apply.

- ☐ birth control pills or patch
- ☐ condoms
- ☐ implant (Nexplanon)
- ☐ intrauterine device (IUD)
- ☐ pulling out (withdrawal)
- ☐ the shot (Depo-Provera)

- ☐ vaginal ring (NuvaRing)

True or false: Internal or external condoms are the only form of birth control that reduces the risk of getting an STI (sexually transmitted infection) from sex.

- ☐ True
- ☐ False

True or False: It is safe for people who have never given birth to use intrauterine devices (IUDs).

- ☐ True
- ☐ False

True or False: It is possible to get pregnant right away after an IUD or contraceptive implant is removed.

- ☐ True
- ☐ False

This last part of the survey contains questions about your experiences with birth control and your feelings about certain methods.
There are no right or wrong answers here. Thank you for your honesty.

What birth control method(s) did you use the last time you had intercourse (penis-in-vagina sex)?
You can select more than one answer if you used more than one method at that time.

- ☐ I have never had that kind of sex
- ☐ no method
- ☐ birth control pills or the patch
- ☐ condoms
- ☐ IUD
- ☐ implant (Nexplanon)
- ☐ the shot (Depo-Provera)
- ☐ vaginal ring (NuvaRing)
- ☐ pulling out (withdrawal)
- ☐ other

What is your ideal, or most preferred, form of birth control?
(If you do not currently want/need birth control, think about what you would want if you did need birth control.)

- ☐ birth control pills or the patch
- ☐ condoms
- ☐ implant (Nexplanon)
- ☐ IUD
- ☐ pulling out (withdrawal)
- ☐ the shot (Depo-Provera)

- ☐ vaginal ring (NuvaRing)
- ☐ none
- ☐ other

What are the most important things to you when choosing a birth control method?

____[free text entry]_____

Right now, how much do you know about IUDs and implants?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Never heard of them I know all about them

How interested are you in using an IUD or implant for birth control?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

I definitely would not I definitely want to

What concerns might stop you from choosing an IUD or implant for yourself?
(If you are someone who cannot get pregnant, what concerns would you have if a friend wanted one?)

___[free text entry]_____

Appendix F

Post-intervention survey

Here are the same questions about birth control facts as before, to check whether your knowledge has changed.
If you're not sure about an answer, don't worry, you're not being graded. Just give your best guess.

Which of these birth control methods is more than 99% effective?
In other words, which methods(s) would result in an average of 0 or 1 pregnancy if 100 people used it for 1 year?
Select all that you think apply.

- ☐ birth control pills or patch
- ☐ condoms
- ☐ implant (Nexplanon)
- ☐ intrauterine device (IUD)
- ☐ pulling out (withdrawal)
- ☐ the shot (Depo-Provera)
- ☐ vaginal ring (NuvaRing)

True or false: Internal or external condoms are the only form of birth control that reduces the risk of getting an STI (sexually transmitted infection) from sex.

- ☐ True
- ☐ False

True or False: It is safe for people who have never given birth to use intrauterine devices (IUDs).

- ☐ True
- ☐ False

True or False: It is possible to get pregnant right away after an IUD or contraceptive implant is removed.

- ☐ True
- ☐ False

Here are some of the same questions about your feelings and experiences as before. There are no right or wrong answers here. Thank you for your honesty.

What is your ideal, or most preferred, form of birth control?
(If you do not currently want/need birth control, think about what you would want if you did need birth control.)

- ☐ birth control pills or the patch
- ☐ condoms
- ☐ implant (Nexplanon)

- ☐ IUD
- ☐ pulling out (withdrawal)
- ☐ the shot (Depo-Provera)
- ☐ vaginal ring (NuvaRing)
- ☐ none
- ☐ other

What are the most important things to you when choosing a birth control method?

____[free text entry]_____

Right now, how much do you know about IUDs and implants?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Never heard of them I know all about them

How interested are you in using an IUD or implant for birth control?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

I definitely would not I definitely want to

What concerns might stop you from choosing an IUD or implant for yourself?
(If you are someone who cannot get pregnant, what concerns would you have if a friend wanted one?)

___[free text entry]_____

That's all!
Remember, it is your right to choose what kind of birth control you are comfortable with.