

ARE LONG-ACTING REVERSIBLE CONTRACEPTIVES A VIABLE SOLUTION FOR ADOLESCENTS IN RURAL
EASTERN NORTH CAROLINA?

by

Ashley B. Stacy

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Ashley B. Stacy

Greenville, NC

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Approved by:

Faculty Mentor (signature required):



Kim Larson, PhD, MPH, RN

Are Long-acting Reversible Contraceptives (LARCs) a Viable Solution for Adolescents in Rural Eastern North Carolina?

Teenage pregnancy rates in the United States have been on a steady decline for the past 5 years, yet these rates remain higher among teens in specific geographic regions. North Carolina has the 16th highest teen pregnancy rate in the US (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2013) and many of the highest rates are in rural counties (NC Department of Health and Human Services, 2012). It is estimated that 80% of all teenage (age 14-18 years) pregnancies in the US are unintended (Finer & Zolna, 2011), making contraception a key component of adolescent health. For years, condoms and oral contraceptive pills have been the most popular methods of contraception used by adolescents (Centers for Disease Control and Prevention, 2011). Most adolescents do not plan to become pregnant and some have difficulty using birth control methods that require consistent behavioral skills, like keeping condoms accessible or consistently taking a pill. For these reasons, long-acting reversible contraceptives (LARCs) may offer a viable alternative. LARC methods include intrauterine devices (IUDs) and implants, and are more effective in preventing pregnancy than both condoms and oral contraceptive pills (Centers for Disease Control and Prevention, 2013). The American College of Obstetricians and Gynecologists issued their official opinion, stating that “Long-acting reversible contraception –intrauterine devices and the contraceptive implant- are safe and appropriate contraceptive methods for most women and adolescents... Adolescents should be encouraged to consider LARC methods (The American College of Obstetricians and Gynecologists, 2012, p.1, 4).”

Review of Literature

Adolescent's Access to LARCs

The cost of contraception is a major concern for young women when making choices about initiating the use of contraception or switching to a new method. Eisenberg, McNicholas, and Peipert (2013) found that the total cost for a patient to initiate a LARC method exceeds \$1,000, with at least \$700 attributed to the wholesale price of the contraceptive device. Not all insurance companies cover FDA-approved contraceptive drugs and devices, including LARC methods. Additionally, most states require parental consent for adolescents to obtain contraception under their parent's private insurance plans, which may influence their decision to seek contraception. While up-front costs are high, LARCs are among the most cost-effective methods because they provide contraception for 3-12 years (Dean & Schwarz, 2011).

In 1970, the federal Title X Family Planning program was enacted to expand healthcare access to low-income populations. Title X is a grant program that provides funding for family planning and preventative health services, including contraceptive counseling (US Department of Health and Human Services, n.d.). Over 20% of the clients that seek medical care at Title X clinics are 19 years of age or younger (Fowler, Lloyd, Gable, Wang, & McClure, 2012), and many of the rural health departments serving adolescents and young adults in eastern NC are designated as Title X clinics. North Carolina's Be Smart program also seeks to expand access by covering the cost of contraception for low-income women not receiving funding from other programs (NC Department of Health and Human Services, 2013).

Mestad et al., (2011) found that adolescents chose LARC methods over non-LARC methods when cost was removed as a barrier, indicating that the high up-front of costs of LARCs

limits their use. Additional barriers to access include geographic availability of clinicians and the ability to schedule and arrange transportation to appointments.

Adolescent's knowledge of LARCs

The recent literature on LARC use among adolescents relates to the overall knowledge of LARCs as appropriate methods of contraception. Various studies have indicated a lack of knowledge on the part of adolescents in regard to LARC contraceptive methods. In one study, less than one-third of participants knew about LARC methods, while over 90% knew about condoms and oral contraceptive pills (Sokkary et al., 2013). Other researchers found that up to 70% of adolescents surveyed were unfamiliar with LARC contraceptive methods (Johnson, Whitaker, Hardwood, Creinin, Chiappetta, & Gold, 2007; Barrett, Soon, Whitaker, Takekawa, & Kaneshiro, 2012). Even among those who knew about LARCs, most could not identify key features of the method (Barrett et al., 2012). The Contraceptive CHOICE Project, a St. Louis, Missouri study, has enrolled 10,000 women to examine the use of LARCs (Mestad et al., 2011). Younger CHOICE participants (age 14-17) were more likely to be interested in LARC methods than older participants after being educated about them, suggesting that adolescents are receptive to the use of LARCs.

There is a need for increased LARC awareness among the adolescent and young adult population. In a survey of 144 women aged 14-24, researchers found that a 3 minute educational video on IUD efficacy and safety, paired with a short demonstration of IUD insertion and removal, drastically changed participant's attitudes about LARCs. Before the educational intervention, approximately 15% of participants expressed a positive attitude toward personal

IUD use. After the short video and demonstration, nearly 55% of participants expressed a positive attitude (Whitaker et al., 2010).

Adolescents who are familiar with LARC methods are likely to have received their information from a source other than their healthcare provider. Fleming, Sokoloff, and Raine (2010) found that 73% of nulliparous study participants who had heard of IUDs received their information from a source other than a healthcare provider, namely the Internet, other media sources, family members, and friends. While most participants did not learn about IUDs from their healthcare provider, those that did were almost 3 times more likely to be interested in initiating the LARC method (Fleming et al., 2010). Health care providers have a responsibility to ensure that adolescents receive accurate information about contraceptive options, and should include education about LARCs as part of their teaching if they wish to see greater utilization of these methods.

Risks vs. benefits of LARCs

Historically, IUDs were not considered a contraceptive option for adolescents. In 2007, The American College of Obstetricians and Gynecologists issued its first statement supporting the safety and efficacy of LARC for adolescents, yet many misconceptions still exist. Foremost, there is not an increased risk of infertility or ectopic pregnancy among nulliparous women using an IUD (Dean & Schwarz, 2011). Moreover, there is no increased risk of pelvic inflammatory disease with LARC methods when clients are free from sexually transmitted infections at the time of insertion (Yen, Saah, & Hillard, 2010). Berenson, Tan, Hirth, and Wilkinson (2013) found that in a sample of 90,000 IUD users, less than 1% of patients experienced a serious complication, including ectopic pregnancy or Pelvic Inflammatory Disease. Most importantly,

continuation rates among LARC users are high. More than 80% of women participating in The Contraceptive CHOICE Project that chose to initiate a LARC method had it in place after 1 year, compared to 55% who chose a non-LARC method (Peipert et al., 2011). Nulliparous women are at a slightly higher risk for expulsion of an IUD, but expulsion rates remain low at less than 10% of users (Dean & Schwarz, 2011). Furthermore, these studies indicate that satisfaction rates among adolescents using LARC methods are high and complication rates are low.

While LARC methods are highly effective in preventing pregnancy, the risks warrant attention. The Mirena IUD (hormonal) may cause infrequent or irregular bleeding or amenorrhea. The Paragard IUD (non-hormonal) may cause heavy menstrual flow and severe cramping (Dean & Schwarz, 2011). In one study, over 50% of participants reported that heavier periods and cramping would prevent them from initiating or continuing a LARC method, indicating that the Mirena IUD may be preferred by consumers (Fleming, Sokoloff, & Raine, 2010). Both IUDs carry a risk of uterine perforation during placement and a risk for expulsion after placement. Risk of uterine perforation with insertion is less than 0.1% percent when performed by a trained professional (Dean & Schwarz, 2011). Finally, the contraceptive implant may cause changes in bleeding patterns, weight gain, and formation of ovarian cysts, and also carries a risk of infection at the insertion site (Raymond, 2011). While there are risks involved, the World Health Organization believes that the advantages of LARCs generally outweigh the risks for nulliparous women under the age of 20 (World Health Organization, 2010).

Provider attitudes about LARCs

Despite the recent ACOG statement in support of LARC use among adolescents, some providers are still hesitant to offer LARCs to this age group (American College of Obstetricians

and Gynecologists, 2012). Kohn, Hacker, Rousselle, and Gold (2011) conducted a survey of 69 providers (nurse practitioners, physicians and physician's assistants) at public school-based health centers in New York City to determine their likelihood to recommend LARCs to adolescents. Among these providers, only 55% responded that they would be "somewhat or very likely to recommend" IUDs to women under the age of 20 years old. A larger study in California surveyed over 800 providers (nurse practitioners, physicians, and physician's assistants) that work with low-income populations. In this study, less than half of respondents considered adolescents appropriate candidates for IUD use (Harper et. al, 2008).

Madden, Allsworth, Hladky, Secura, and Peipert (2010) analyzed data from 137 providers (predominantly physicians) and determined that 60% felt that IUDs were appropriate for nulliparous women, but only 30% would recommend IUDs to adolescents. Over one-third of these providers had not been trained in IUD insertion during their residency, especially if they completed their training before 1990, indicating a need for further education among clinicians who provide contraceptive services (Madden, Allsworth, Hladky, Secura, & Peipert, 2010).

Differences also exist between rural and urban providers. Vaaler, Kalanges, Fonseca, and Castrucci (2011) found that 75% of urban providers were trained in methods of LARC insertion, compared to only 57% of rural providers. Less than 1% of rural-dwelling women use LARCs as their preferred method of contraception, compared to 8% of urban-dwelling women (Centers for Disease Control and Prevention, 2007).

Purpose

The goal of this Senior Honors project was to conduct a program evaluation to determine the contraceptive use trends of adolescents and young adults in rural eastern North Carolina (NC).

This honors project was one component of a 7 week community health clinical practicum, located in the family planning clinic of a rural health department.

Methodology

This honors project was conducted in partnership with a public health nurse preceptor in a local health department. The methodology for this project was a program evaluation to understand the use of LARCs among adolescents and young adult clients attending the family planning clinic. First, an environmental assessment was completed to better understand the context of the community. The ethnic demographics of the county were 55.6% Caucasian, 30.1% African American, and 9.9% Hispanic/Latino. Second, an interview guide was developed. Third, key informants were identified and interviewed. Finally, I participated in the assessments of clients in the family planning clinic, under the supervision of the public health nurse preceptor.

A total of 7 key informants were interviewed. Key informants included 3 public health nurses, 2 nurse practitioners, 1 health educator, and the director of the family planning clinic. All but 1 of these key informants were employees of the health department. The interview guide was composed of the following questions:

- When clients come in for initial family planning visits, are most of them seeking education about all contraceptive methods, or do they already have one in mind?
- What method would you say is the most popular among all visitors to the health department? Among adolescents?
- Have clients shared their reasons for liking or disliking LARCs with you?

- Of clients who choose LARCs, would you say most of them continue their method for at least 3 years?
- What is the most common complaint associated with LARC discontinuation?
- Do you know of any other places in this county where low-income adolescents can obtain contraception?
- What does the health department do to reach out to adolescents and educate them about contraception?

Nurse practitioners were asked the same questions, plus two additional questions:

- As a provider, do you feel that IUDs are safe for adolescents to use?
- Does history of sexually transmitted infections influence your decision to prescribe an IUD?

A health educator working for the health department was asked the following questions:

- What does the health department do to reach out to adolescents and educate them about contraception?
- Do you include LARC methods in your health teaching?

In this target county, six school-based health centers serve low income middle and high schools. One registered nurse working in one of these centers also served as a key informant by explaining the health center's role in contraceptive counseling and their relationship with the health department. Since she did not work at the health department, many of the interview questions did not apply. She was also asked the following questions:

- What does this health center do to reach out to adolescents and educate them about contraception?
- Do you include LARC methods in your health teaching?

During a typical interview in the family planning clinic, standard information collected included age, ethnicity, method of contraception, whether the client was continuing or initiating their method, the type of LARC chosen (if applicable), and if the client had ever given birth. This information was used in the program evaluation to understand the utilization of LARC methods. The population of interest was adolescents. In order to assess an appropriate number of clients, the age categories evaluated were: 14-18, 19-23, and 24-28 years.

Findings

During the 7 week practicum period, information from 34 family planning clients between the ages of 14 and 28 years was evaluated. Of these clients, 12% were 14-18 years, 47% were 19-23 years, and 41% were 24-28 years old. Additionally, 17% of the clients were Caucasian, 50% were African American, and 33% were Hispanic/Latina. The majority (85%) of the clients had given birth to at least one child. The main finding was that adolescents and young adults at this public health department do not frequently choose LARC methods. The LARC methods offered at the health department were the Paragard IUD (non-hormonal) and the Mirena IUD (hormonal). This local health department started offering the Mirena IUD only one month before the program evaluation took place. The contraceptive implant insertion was referred to a local OB/GYN office. The non-LARC methods offered at the health department were the Depo Provera injection, Oral Contraceptive Pills, the Patch, Diaphragms, and Condoms.

Depo Provera was the most popular contraceptive method among all age groups; 21 clients, or 62%, chose this method. Of the other 13 clients, 6 (17%) chose birth control pills, 5 chose IUDs (15%), and 2 (6%) chose the contraceptive implant. Therefore, only 7 clients out of 34 initiated a LARC method. Of those who initiated an IUD, all chose the Paragard IUD over the Mirena IUD. Moreover, in the year 2013, only 3 adolescents (ages 14-18) had an IUD inserted at the health department. According to key informants, most clients come to the health department with a method of choice in mind, most often Depo Provera.

According to key informants, as many as half of those who initiated a LARC method had it removed within 3 years. The most common reasons cited for Paragard IUD removal were pain, cramping, and heavy bleeding (expected side effects for the first few months). Many would schedule IUD removal in the first couple of months after insertion. Two clients had previously tried a LARC method, but chose to initiate a different method because their IUDs were expelled. One of those clients initiated the contraceptive implant. No clients had the Mirena IUD inserted or removed during the program evaluation.

Both nurse practitioners that served as key informants believed that IUDs were safe for adolescents to use, but they were more likely to recommend LARCs to women who had previously given birth. One reason for this was the pain upon insertion in nulliparous women due to the cervix never having been dilated. In addition, providers were less likely to recommend an IUD for clients with a history of sexually transmitted infections, due to potential risk of new infection and Pelvic Inflammatory Disease. The ideal candidate would be in a monogamous relationship, have children, and be looking for a long-term method.

Key informants noted that Latina women were more likely to choose IUDs compared to other ethnic groups. Of the 5 clients that initiated IUDs, 4 of them were Latina. According to key informants, this may be due to less frequent provider follow-up and office visit requirements, which is important in populations with limited resources.

One key informant would only recommend a LARC method for those who were “non-compliant” with other contraceptive methods. She did not recommend IUDs for adolescents at all because she believed the risk of complications was too high, including the risk of infertility. Finally, a key informant who provides health teaching presentations to adolescents in public schools reported that very few students ask about IUDs or implants, though they are covered in her teaching. Interestingly, the only 2 family planning clinic clients that planned to initiate an implant said that they had heard about the method from a presentation at school.

Finally, in counseling adolescents and young women about LARC methods, identified barriers to acceptance were lack of understanding, negative experiences of family members/friends using LARCs, and adverse side effects. Specifically, many clients were not receptive to the idea of a foreign object like the IUD or implant inside of their body.

Discussion

Several conclusions can be drawn from the program evaluation findings. The literature review conducted focused on adolescent’s access and knowledge of LARCs, their risks and benefits, and provider attitudes about LARCs. All of these areas were addressed in the program evaluation.

Adolescents in the target county had access to LARC methods through the health department, which was a Title X clinic. The cost of IUD insertion was covered by Medicaid.

The health department also used a sliding scale fee for services for those who did not have insurance, which was based on reported income. Applications for state grant money were also available for clients with low incomes who needed financial assistance to initiate a LARC method. Therefore, nearly all clients were able to obtain an IUD at little or no cost. One barrier to access was that the contraceptive implant insertion was referred to a local physician's private office. While this office may accept Medicaid, there could be a transportation barrier, although there is a public bus system. Clients are also more likely to miss appointments if they are being seen in multiple offices. Keeping up with health department appointments (a minimum of a yearly physical is required to maintain status as a family planning clinic client) and physician appointments makes follow-up more complicated. Offering the contraceptive implant at the health department would increase access to LARC methods for this population. Another possible barrier to access are the hours of operation of the health department. The health department was open Monday-Thursday from 7am-6pm, not on Friday or weekends.

The health department and school-based health centers referring clients to the health department should also continue to educate adolescents and young adults about LARC methods through the family planning clinic and community health educators. Many of the clients seeking contraception at the health department had no prior knowledge of LARCs, and some that did obtained their information from friends and family members. According to Fleming et al. (2010), clients who obtain their knowledge from a healthcare provider are 3 times more likely to initiate a LARC method. The public health nurse preceptor that participated in this project explained each type of available contraception to first-time family planning clinic clients. Even when clients had a specific method in mind, she asked them if they were familiar with all of the

methods available at the health department, which is important for increasing adolescent's knowledge of LARCs.

This program evaluation offered insight into adolescents and young adult's receptiveness to LARC methods and factors hindering initiation or continuation of one. The Contraceptive CHOICE Project found that 80% of clients who initiated a LARC method continued it for at least a year (Peipert et al., 2011). According to key informants, the LARC continuation rate among adolescents and young adult clients at the rural health department was lower, at about 50%. The most common complaints associated with Paragard IUD removal were heavy bleeding, pain, and cramping. Since Depo Provera was the most popular contraceptive method at the health department, it is likely that the Mirena IUD will be much better received because the menstrual changes associated with Mirena are more similar to Depo Provera than the Paragard IUD. Depo Provera and the Mirena IUD are both hormonal methods, while the Paragard IUD is a non-hormonal method.

Finally, the health department should further explore partnerships with local school-based health centers to ensure that students are receiving comprehensive education free from provider bias. This is important, because students can go to these school-based health centers for contraceptive counseling, at which time they are referred to the health department to obtain their method of choice. Key informant interviews indicated a discrepancy between the information that was being provided. Incorrect information could influence a student's decision regarding contraceptive choice. For example, one nurse believed that IUDs increase the risk of infertility, which is inaccurate (Dean & Schwarz, 2011). Other health professionals only shared information about LARC methods to clients who were "non-compliant" with other methods. The recommendation is that health professionals with reproductive health responsibilities receive

the most current information about contraceptive methods as part of their professional development.

While the IUD and the Implant were not popular methods of contraception obtained at the health department, the findings of this program evaluation suggested that there are some rural adolescents and young adults who are interested in LARC methods. The number of clients initiating LARC methods at the health department increased from 2012 to 2013, and with continued education and expanded access, the numbers may continue to rise.

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