

# Factors Important to Teens when Choosing Contraception: Possible Reasons for Low LARC Use Among Teens

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## RESEARCH

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## INTRODUCTION

Although the teenage pregnancy rate has decreased over the past decade, the US still has the highest teen birth rate among developed countries [1]. The most effective method of contraception for adolescent girls is long-acting reversible (LARC) such as intrauterine devices (IUDs) and subdermal implants [2]. Unfortunately most teenagers continue to use less reliable methods such as condoms [3,4]. In 2011-2013, 59.1% of sexually active teenagers in the US used condoms for contraception, while 19% used birth control pills, 4.7% used either a shot/patch/vaginal ring, and only 1.6% used LARC [5]. These numbers still remained low in 2006-2010. In addition, the 2006-2010 National Survey of Family Growth (NSFG) data shows that LARC use has significantly increased

only in women 18 years and older. This is concerning as LARC use is most effective in preventing teen pregnancies if used at the onset of sexual activity especially since many teenagers in the US have their first sexual experience by 16 years of age [6].

The contraceptive CHOICE project has shown that once the barriers of cost and lack of awareness/knowledge was removed, a little over half of the teenagers enrolled in the study chose to receive LARC [7]. Nevertheless, it is important to realize that despite the removal of these barriers, a little less than half of sexually active women did not wish to receive LARC. Although there have been multiple studies investigating teens and decision-making regarding hormonal contraceptive-use, emergency-contraceptive use, and LARC use after having a pregnancy [8-10], we were able to find only one study on young women and LARC decision-making [11]. In this study, Sundstrom et al. found that among barriers to LARC uptake were discouragement by medical provider, costs, misconceptions, and perceived risks. These participants, however, were sampled from a university, which introduced a substantial amount of sampling bias. Nevertheless, the study does introduce some potential factors that teenagers consider when choosing contraception, namely costs, potential pain or discomfort, irregularities in menstrual cycle or emotional status, and perceived risks to health. To investigate this topic further, we surveyed teenagers and young women who attended an inner-city hospital-based clinic in Houston. Knowledge regarding LARC and factors



that were important in choosing a contraceptive method were ascertained by the survey.

## METHODS

Data collection involved surveys completed between March and May 2016 at the Ben Taub General Hospital Teen Health Clinic in Houston, TX. This clinic is part of the Baylor Teen Health System, a countywide system that provides free comprehensive reproductive health programs for the indigent teens of Houston. The system serves more than 20,000 teenagers per year, a large part of the Houston's youth in underprivileged neighborhoods. Services include free-of-cost STD testing/ treatment and contraceptive services.

Research protocol was reviewed and approved by both the University of Texas Medical Branch (UTMB) and Baylor College of Medicine (BCM) Institutional Review Boards. Only sexually active patients less than 24 years of age were allowed participation in the study, as the Center for Disease Control (CDC) frequently reports on this age group when discussing risky sexual behavior among adolescents [12-14]. Surveys were designed by a committee of obstetrician gynecologists from UTMB, contraceptive researchers from both UTMB and BCM, and health professional staff and administrators from BCM. The final survey consisted of 23 multiple choice and open-ended questions. All surveys were anonymous.

Eligible Individuals were approached in the waiting room, consented in a private clinic room, and were asked to complete the survey prior to leaving the clinic. Surveys were then dropped off in a locked box until completion of the study. Information was collected through the survey on (1) age and race, (2) sexual history including age of coitarche, number of sexual partners, number of pregnancies and abortions, and (3) contraceptive history including contraceptive use at coitarche and contraceptives the respondent had used in the past. LARC knowledge was then ascertained via questions asking the shape of LARC devices, the length of time they can stay in the body, the anatomy of placement, and whether they were safe in teenagers. Finally, teenagers were asked to rank in order whose

opinions were most important in their contraceptive decision-making and which contraceptive characteristics were most important in choosing a method. Options to the latter question were created based on findings from the literature and answers provided by respondents where an important contraceptive characteristic was not an option.

Statistical analysis consisted of calculating descriptive statistics on demographic, sexual, and contraceptive data. Then total correct answers were calculated from the knowledge-based questions. Finally, aggregate score of importance was calculated according to rank of importance with regards to (1) whose opinions were most important in the respondent's contraceptive decision making and (2) which factors were most important in deciding which contraceptive to use. Of note, the respondents gave a numerical order for all available options; therefore, these were relative ranks with a lower score reflecting greater importance than a higher score.

## RESULTS

A total of 34 girls ranging from 15-23 years of age completed the survey (Table 1). The mean age of respondents was  $20.7 \pm 2$  years. With regards to race, most of the respondents were black (41%) or hispanic (44%). Average age of coitarche was  $16 \pm 2$  and average number of lifetime sexual partners was  $5 \pm 3$ . Most of the respondents had no previous pregnancies (65%) while 24% had 1-2 previous pregnancies (12% did not provide a response).

With regards to contraceptive history (Table 2), 53% of respondents did not use contraception at coitarche. Of the 47% who did use contraception at coitarche, the majority (81%) used condoms. For the majority (41%) of the girls surveyed, the first hormonal contraceptive used was the medroxyprogesterone shot followed by oral contraceptives (32%). Twenty-six percent of the girls had never used hormonal contraception. At the time of the survey, the majority (50%) of respondents were not using hormonal contraception, followed by 24% who were using the medroxyprogesterone shot, and 15% who were using oral contraceptives. With regards to age, 4 (33%) of the 12 girls who used oral contraceptives initiated use prior to 19

years of age, 11 (61%) of the 18 girls who used the medroxyprogesterone shot initiated use prior to 19 years old, 2 (75%) of the 3 girls who used IUDs initiated use prior to 19 years old, and 1 (25%) of the 4 girls who used the sub dermal implant initiated use prior to 19 years of age.

With regards to LARC knowledge-based questions (Table 3), 70% of respondents chose the correct multiple-choice answer for “In what body part does the IUD go?” and “Are IUDs and birth control implants safe for teenagers?”. Only 45% of respondents were able to draw the correct shape of a sub dermal implant (rod-shaped), while only 1/3 of the respondents were able to draw the IUD correctly (T-shaped) or chose the correct multiple-choice answer for how long the IUD can stay in the body. Of all the respondents 11 (21%) knew somebody else who had a LARC method.

Respondents were then asked to rank whose opinions were the most important to them when deciding to choose a contraceptive methods (Table 4). A lower number reflected greater importance. The aggregate scores for all respondents were: 115 for the opinions of family members, 127 for the opinions of friends, 137 for personal opinion, and 161 for the opinions of one’s sexual partner.

Finally respondents were asked what contraceptive characteristics were the most important in choosing a contraceptive method, with a lower number reflecting greater importance (Figure 1). The aggregate score in order of importance was contraceptives that did not make periods irregular (aggregate score=85), had less side effects (aggregate score=89), had low frequency of use (i.e. taking a pill every day versus a shot every 3 months) (aggregate score=91), were less associated with pain for the user (aggregate score=108) and the partner (aggregate score=163), and were less costly (aggregate score=166).

## DISCUSSION

The results of this study reveal that multiple factors go into teenage contraception decision-making. First, various opinions factor in differently when a teenager is deciding about contraception. There have been a limited number of studies on this topic. In their 2004 study of 399

teenagers in San Francisco, Harper et al. found that the majority of respondents (49%) cited themselves as have having the most influence in their contraception decision-making, followed by 13% of mothers, 12% of friends, and 22% male partners [15]. This is in stark contrast to our findings that family members have the biggest influence and partners have the least influence in the teenager’s decision regarding contraception. The majority of respondents for both studies were hispanic or black, making the possible explanation of ethnic disparities between the two studies less likely. More awareness and/or acceptance of teen sexual activity among parents may offer an explanation for this difference, although this is not documented in the literature. If this trend is true, it offers possible hope in preventing teen pregnancy and risky sexual behavior as the connection between parent-child communication and less risky sexual behavior is well documented [16-18]. It is also surprising that respondents placed more importance on the opinions of family and friends over personal opinions with regards to contraception. Reasons for this trend should be further investigated.

With regards to contraceptive factors that were important in deciding a method, other studies have also found that teenagers have some reservations in taking anything that disrupts their menstrual cycle. In their qualitative study analyzing 51 in-depth interviews of women ages 16-25, Cheung at al also found that many felt periods were normal and natural, and were averse to taking anything that changed this [19]. Perhaps more emphasis needs to be placed on sexual education and emphasis on how menses is simply the shedding of an endometrial lining when conception has not occurred and that there is no biological function in having a menstrual cycle [20]. Sexual education can also focus on contraceptives and the numerous studies that have shown no adverse effects of irregular menses that may result.

Unfortunately this study corroborates the previously published finding that LARC uptake is low among teenagers. This study also shows that few teenagers use LARC as their first hormonal contraception, despite superior effectiveness and recommendations by medical

organizations [2]. All of those respondents who used LARC had another form of hormonal contraception prior to use. In addition, we found that of the teens who used LARC, most were older teens as all except one of the LARC users in our study had obtained LARC at 19 years of age or older. This corroborates national trends, which show that the small increase in teen LARC use has been predominantly in teenagers 18-19 years old, and has not statistically changed in teenagers less than 18 years old [21]. This delay could be explained by the initiation of hormonal contraception at a younger age with a less effective method and then a subsequent transition to LARC. As our study confirms the well-documented observation that the average age of coitarche is 16 years old [22-26], if sexual initiation begins at an average of 16 years then LARC use needs to occur at or prior to this age in order to maximize pregnancy prevention. Further studies are necessary to determine why uptake rates still remain so low in the younger teens in order to decrease barriers to use in this population.

An interesting new finding from our study is that the medroxyprogesterone shots were the most common hormonal methods first used by the respondents. Other studies have shown that oral contraceptives have been the most popular method among teens [6,27]. Possible explanations may include a local trend among teens who are exposed to other teens using similar contraceptive methods or increased awareness among teens of more effective contraceptive methods.

These findings may have larger implications for LARC methods as teenagers can only obtain each medroxyprogesterone shot at a clinic visit as opposed to oral contraceptives for which they obtain a yearly refill from their provider and then obtain packs from their local pharmacy. If teenagers are willing to visit the clinic every 3 months for a more effective form of contraception, then this may suggest that their desire for effective contraception is greater than their concern with inconvenience. Again, this is only a postulation and further research is needed on the topic.

Finally, our studies confirm the findings of low LARC knowledge reported in the literature. There are many

studies that have shown that teenagers have many misconceptions regarding LARC devices, which has been associated with decreased LARC use [28,29]. In addition to improved sexual education with regards to the safety of amenorrhea or oligomenorrhea, perhaps sexual education should include an advanced component pertaining to contraceptive (including LARC) education, as the need for more knowledge dissemination is evident.

There are a few limitations to this study. First, due to the small sample size, more rigorous statistics were not performed. Nevertheless, this study still provides useful information as it is one of few studies which directly investigates whose opinions matter and what contraceptive factors are important to teenagers when deciding a contraceptive method. Second, although the surveys were anonymous, we cannot guarantee accuracy of responses. Finally, our survey was limited to teenagers of low-income families who live in Houston and therefore may not be generalizable to other income-levels or regions.

In conclusion, this study offers insight into what factors are important when a teenager chooses a contraceptive method. We found that the opinions of family and friends matter the most, therefore education regarding LARC effectiveness need to target the whole community instead of just the individuals. Settings for such interventions should go beyond medical facilities and should include locations where families and/or young teens gather together frequently. We also found that these young girls are less willing to try methods that affect the menstrual cycle, although these concerns are scientifically unfounded. Contraceptive and sexual education should focus on the biology behind cycles and the evidence regarding the safety behind changing these cycles.

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### PEER REVIEW

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