

Acceptability of Contraceptive Self-Injection with DMPA-SC Among Adolescents in Gulu District, Uganda

CONTEXT: In Uganda, an estimated one in four adolescent women have begun childbearing. Many adolescent pregnancies are unintended because of substantial barriers to contraceptive access. The injectable contraceptive is the most commonly used method in Uganda, and a new subcutaneous version offers the possibility of reducing access barriers by offering a self-injection option. However, more information about adolescent attitudes toward and interest in self-injection is needed.

METHODS: In 2015, in-depth interviews were conducted with a purposive sample of 46 adolescent women aged 15–19 from rural and urban areas of Gulu District. Respondents were asked about their demographic characteristics, experience with contraceptives and opinions about injectable contraception, then introduced to subcutaneous depot medroxyprogesterone acetate (DMPA-SC) and trained in how to give an injection using a model. They were then asked their opinion about contraceptive self-injection. The interviews were transcribed and analyzed qualitatively to identify key themes.

RESULTS: Although the injectable was generally viewed favorably, some adolescents expressed reservations about the suitability of injectable contraception for adolescents. The most common concern was fear of infertility. The majority felt self-injection would be an appealing option to adolescents because of the time and money saved and the discreet nature of injecting at home. Barriers to self-injection included fear of needles, the potential of making a mistake and lack of privacy at home.

CONCLUSIONS: Contraceptive self-injection has the potential to increase contraceptive access and use for adolescents in Uganda, and should be considered as a delivery modality in the context of adolescent-friendly contraceptive services.

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More than 250 million adolescents aged 15–19 live in developing regions of the world;¹ these adolescents have the right to the highest attainable standard of health, including access to contraceptive information and services.² An estimated 23 million of these adolescents have an unmet need for contraception.¹ Sexually active adolescents, both married and unmarried, face significant obstacles to obtaining contraceptive information and services, including stigma and provider biases, gender and cultural norms that restrict mobility and promote early fertility, lack of confidentiality and privacy, a limited range of methods, financial barriers, and legal and policy constraints.³

Adolescents aged 10–19 make up nearly 25% of the population in Uganda, and one in four adolescents younger than age 20 either have a child or are pregnant with their first child.⁴ Half of women aged 25–49 in Uganda report that their sexual debut occurred before their 17th birthday, and on average, the lag between first sexual activity and first use of a contraceptive is more than six years.⁵ Thus, many Ugandan women become sexually active during adolescence, but delay adopting a contraceptive method.

Although much of the concern about unmet need in adolescents focuses on premarital childbearing, adolescents who have married also often have unmet need.

Currently, among married women aged 15–19, 18% are using a modern contraceptive method and 39% have unmet need.⁶ Among unmarried, sexually active youth aged 15–24, fewer than four in 10 were using a modern contraceptive method in 2014–2015.⁷

At the 2012 London Summit on Family Planning, the government of Uganda expressed a commitment to universal access to family planning and to scaling up the provision of youth-friendly services.⁸ Consistent with these priorities, the country's 2015 Health Sector Development Plan identified the reduction in adolescent pregnancy as a key performance indicator.⁹ Although these statements suggest there is consensus among senior stakeholders that more needs to be done to meet adolescents' reproductive health needs, adolescents face significant and unique barriers to obtaining contraceptives. Providers may restrict access to contraception on the basis of age, parity or marital status, and some health providers refuse to provide any or certain methods of contraception to adolescents because of the belief that contraceptives encourage premarital sex or because of misunderstandings about who can use certain methods safely and effectively.^{10,11} In particular, family planning providers in Sub-Saharan Africa may be reluctant

to provide contraceptives to adolescents out of a misplaced fear that it could impair future fertility.^{12,13} The World Health Organization (WHO) identifies no medical contraindications specific to adolescents for any contraceptive method, and advocates for adolescents' right to a full range of contraception options.¹⁴

A qualitative study in Burkina Faso, Malawi, Ghana and Uganda found that adolescents reported being humiliated, insulted and shouted at by health workers when seeking sexual and reproductive services.¹⁵ In addition, stigma in the community can limit access, because adolescents fear being seen attending a clinic for family planning services. Moreover, sexual activity among female adolescents is sometimes unwanted, coerced or transactional, limiting their agency and ability to use contraceptives. Finally, cost, distance to health facilities and clinic hours of operation are common barriers to obtaining contraceptives that may be more pronounced for adolescents, particularly those who are in school or who lack their own financial resources.^{13,15,16}

In Uganda, injectable contraception is the most popular method among youth aged 15–24 who are in union (used by 64% of these women who use contraceptives), and the second most popular method after condoms among unmarried youth aged 15–24 (31%).⁷ Injectable contraception is highly effective, safe and discreet, does not require partner communication and is not coitus dependent. According to WHO, the benefits for adolescents (including those at high risk of HIV infection) of using injectable contraception containing depot medroxyprogesterone acetate (DMPA) generally outweigh the risks.^{17,18}

That said, a Demographic and Health Survey analysis from 40 countries found that adolescents tend to have higher rates of injectable discontinuation than older women.¹⁹ A study of adolescent DMPA users in the United States found that the majority discontinued because of side effects, and nearly one-fourth discontinued specifically because it was difficult for them to return to the clinic for reinjection.²⁰ Likewise, a study in South Africa found that women, including adolescents, frequently discontinue DMPA after missing reinjection appointments because of conflicts with work, school or family commitments.²¹

A subcutaneous version of the injectable (DMPA-SC) offers the possibility of reducing access barriers that impede uptake and continuation of the method, particularly for adolescents. DMPA-SC is a three-month, progestin-only injectable contraceptive packaged in a small, prefilled, auto-disable device designed to be easy for providers to administer with minimal training and for women to self-inject. The product is registered in several countries in Sub-Saharan Africa, including Uganda, where it has been available from community health workers in the public sector since 2014. The manufacturer received governmental approval from the United Kingdom to include self-injection in the label in 2016, and Uganda's National Drug Authority approved the relabeling of the product for self-injection in 2017.

Self-injection may improve adolescent access by removing the cost and time required for repeated travel to a facility and by increasing the potential for discreet use and user control.

A study of self-injection in Uganda found that nearly 90% of women aged 18–49 were capable of self-injecting DMPA-SC proficiently three months after a single one-on-one training session.²² Studies of self-administration of injectable contraception from developed country settings have also yielded promising results.^{23–25} However, the only study to date (conducted in the United States) that focused on adolescents found modest levels of interest in self-injection (41–59%) and 63% of participants were proficient after training. Though the study was small, the authors concluded that self-injection was feasible for adolescents with minimal training and support.²⁶ In studies of self-injection of other drugs by minors, children have been taught to effectively self-administer insulin for diabetes and interferon to treat hepatitis.²⁷

To date, no published studies have explored the acceptability of self-injection of DMPA-SC among adolescents in a low-resource setting. Findings from stakeholder interviews in Uganda showed widespread consensus that young people would be particularly receptive to this technology.²⁸ Studies that aim to understand the appeal of self-injection, and to identify barriers to self-injection, are needed to ensure that adolescents' unique needs are met as programs offering self-injection of DMPA-SC are rolled out.

The goal of this study was to explore the acceptability of self-injection of DMPA-SC among adolescents in Uganda. Key objectives were to understand adolescents' attitudes about injectable contraceptive use and to explore their interest in self-injection, including perceived benefits and barriers to the practice. These results can help country-level and global leaders make informed decisions about the introduction of self-injection of DMPA-SC, particularly to adolescents.

METHODS

Study Sites and Participants

This study took place in the district of Gulu in Northern Uganda in October–December 2015, and was conducted in collaboration with the Ugandan Ministry of Health. Uganda was selected for this study because it was one of just a few countries in which DMPA-SC had been introduced, and the Ministry of Health felt that it would be politically acceptable to discuss contraceptive use and self-injection with adolescents. Gulu District was chosen because the nongovernmental organization Reproductive Health Uganda runs a clinic there with outreach to rural areas, making it possible to readily find both urban and rural adolescents with contraceptive knowledge and experience. In addition, the Straight Talk Foundation, another nongovernmental organization, runs a youth center in Gulu that provides services to both in-school and out-of-school youth, facilitating the collection of information from adolescents outside of a clinic setting.

Purposive sampling was used to recruit participants. During the three-month recruitment period, adolescents at a clinic or outreach event for contraceptive services were screened for eligibility by research assistants after they completed their contraceptive visit; those who met the inclusion criteria were invited to participate. Adolescents who were at the Straight Talk Foundation youth center, or a clinic or outreach event for services other than contraception, were screened for eligibility after they completed their clinic visit or activity. In general, most individuals who were eligible were willing to participate.

To participate in the study, adolescent women were required to be residents of Gulu District and to have been sexually active within the past 12 months. Adolescents aged 15–19 were eligible; however, 15–17-year-olds were included only if they met the definition of an emancipated minor* because requesting parental permission could compromise participant confidentiality regarding contraceptive use.

Study Design and Procedures

Because little is known about the views of adolescent women on injectable use or on self-injection in particular, we used a qualitative study design to allow participants to describe their experiences, feelings and opinions. In-depth interviews were used rather than focus groups because of the sensitive nature of the topic and the desire to understand individual opinions and preferences rather than group norms. Qualitative research methods allowed us to understand not only if adolescents were interested in self-injection but also why they were or were not interested.

A three-day training was conducted for the three research assistants, who were licensed nurses familiar with DMPA-SC administration. The training, led by the principal investigators and one of the co-investigators, focused on screening and recruiting participants, administering informed consent, conducting in-depth interviews, translating and transcribing audio recordings, and data quality assurance.

All interviews were conducted in a private space (such as an office in the clinic or an empty room in the youth center) by the research assistants in English or the local language (Acholi), according to the preference of the participant. Each interview lasted about 60 minutes. Interviews were audio-recorded, and recordings were translated into English and transcribed into a Microsoft Word document. A subset of transcripts (10%) were back-translated and compared with the original audio recordings to assess the quality of transcription.

Interviews were conducted using a semistructured interview guide that had been developed by the study team. Principal areas of inquiry included basic demographic

background characteristics of participants; reasons for nonuse or discontinuation of family planning; rationale for choosing the contraceptive method used, if any; opinion of and interest in injectable contraception; opinion of and interest in self-injection; and perceived benefits of or barriers to practicing self-injection. The interview began with questions about the respondent's background and living arrangements, experience with contraceptives and opinions about injectable contraception, and then turned to an orientation on DMPA-SC and training in self-injection. Interviews (and the recording) were suspended during the orientation and training, and then resumed with the discussion on self-injection.

As part of their in-depth interview, participants were introduced to DMPA-SC, shown the injection steps on a model (a condom filled with salt) and trained in how to give an injection. Participants then practiced giving an injection on the model, following the steps in a locally developed and pretested client instruction booklet. Study participants did not actually self-inject.

All interview transcripts were uploaded to a qualitative analysis software program, Atlas.ti (version 7.5.15). The coding schemes were developed on the basis of initial findings from data analysis and evolved through an iterative process. Two coders were involved in the analysis, and coding results were compared and discrepancies resolved.

Upon completion of coding, the text from the transcripts was sorted by code and analyzed. Memos were developed for each code (or collection of related codes) to summarize the findings and the key patterns and themes. We compared results for select codes by key sample characteristics (contraceptive users, nonusers), and highlighted differences in response patterns by method use.

The study was approved by the PATH Research Ethics Committee, the Mulago Hospital Institutional Review Board and the Uganda National Council for Science and Technology.

RESULTS

Participant Characteristics

A total of 46 adolescents were interviewed. About half of the adolescents (48%) were 19 years old, 41% were 17–18 years old and 11% were younger than 17 (Table 1). The sample was roughly split among those who were single (37%), those living with a partner (33%) and those who were married (30%). Most had one child (63%), 20% had two children and 17% had not yet had a child; participants were not asked if they were currently pregnant. Fifty-nine percent of the women lived with their husband or his family, 39% lived with their parents or other family members, and 2% lived with school friends. Seventy-four percent of participants had at least some primary education, 15% had completed at least some secondary school and 11% were still in school.

Overall, 52% of participants were using a modern contraceptive method at the time of their interview, 30% had never used one and 17% had used one in the past but were not currently doing so. The most

*The Ugandan National Guidelines for Research Involving Humans as Research Participants defines emancipated minors as individuals younger than 18 years old who are pregnant, married, have a child or are responsible for their own livelihood (source: Wells E, *Countering Myths and Misperceptions About Contraceptives*, Seattle, WA, USA: PATH, 2015, https://www.path.org/publications/files/RH_outlook_myths_mis_june_2015.pdf).

common method currently used was the injectable (30% of participants), followed by the implant (11%), lactational amenorrhea method (9%) and oral contraceptives (2%). None of the participants reported currently using condoms or the IUD.

An examination of parity by marital status for younger adolescents (15–17 years) and older adolescents (18–19 years) revealed that half of the sample consisted of married or cohabiting older adolescents, and that mean parity was higher among married or cohabiting adolescents than among single adolescents in both age-groups (Table 2).

TABLE 1. Percentage distribution of adolescent women aged 15–19 participating in in-depth interviews on attitudes toward and interest in contraceptive self-injection, by selected characteristics, Gulu District, Uganda, 2015

Characteristic	% (N=46)
Age	
15	2.2
16	8.7
17	19.6
18	21.7
19	47.9
Relationship status	
Single	37.0
Cohabiting	32.6
Married	30.4
Parity	
0	17.4
1	63.0
2	19.6
Living arrangements	
Husband/husband's family	58.7
Parents/other family	39.1
School friends	2.2
Completed education	
At least some primary	73.9
At least some secondary	15.2
Currently in school	10.9
Current contraceptive use	
Injectable	30.4
Implant	11.0
Lactational amenorrhea	8.7
Oral contraceptives	2.2
Never used	30.4
Previously used	17.4
Total	100.0

Note: Percentages may not total 100.0 because of rounding.

TABLE 2. Mean parity of adolescent women participating in in-depth interviews, by age and marital status, Gulu District, Uganda, 2015

Age and marital status	% (N=46)	Mean parity
15–17 years old		
Married/cohabiting	13.0	1.2
Single	17.4	0.9
18–19 years old		
Married/cohabiting	50.0	1.2
Single	19.5	0.6

Barriers to Acceptance of Self-Injection

Barriers to the adoption of self-injection by adolescents generally fell into three categories—concerns related to use of contraceptives generally, specific concerns about the injectable and concerns about self-injection.

• *Barriers to contraceptive use.* The most common reason for nonuse or discontinuation of family planning, mentioned by 15 individuals—including never-users as well as former users—was concern about side effects or negative health outcomes. Concerns ranged from stark misperceptions (e.g., fears of blood accumulating in the uterus, harm to the ovaries and birth defects) to concerns about documented side effects associated with hormonal contraception (e.g., absence of menstruation, excessive or intermittent bleeding, headache, abdominal pain, and weight gain or loss). Health concerns stemming from method use were much more common reasons for discontinuing or not using contraceptives than the desire to become pregnant. Some women expressed considerable alarm about side effects, and appeared to attribute unrelated health concerns to their use of contraceptives. Four individuals (three of whom had never used a contraceptive method) reported that they had no plans to use in the future because of fear of harmful side effects.

“Aah nurse, this issue of family planning has really confused me. When I inserted this thing (implant), I cannot see my periods up to now. I have abdominal cramps. Now I think it is accumulating blood in my abdomen.... I also have chest pain and ulcers. I have been taking treatment, and now I have come back to the hospital because I have a sore throat.”—*Current user, age 19*

“What people say is that it [family planning] can affect the ovaries. I fear because if that thing...if your body is not used to it, it can torture you.”—*Never-user, age 16*

“I still don't know [if I will use family planning in the future]. I have some concerns because of the side effects, as some are life-threatening.”—*Never-user, age 16*

Aside from health concerns, other reasons for nonuse of contraceptive methods (each of which was cited by 2–4 individuals) included lack of knowledge, being too young or in school, not currently being in a sexual relationship, or the husband or partner not allowing it.

“I am not using family planning right now because we are young and I am still at school.”—*Never-user, age 18*

• *Barriers to injectable use.* Adolescents who had not previously used injectable contraception (20 participants) were asked whether the injectable is an appropriate method for adolescents. Half of them (10), including six of the 14 who had never used a contraceptive, felt that it could be a good option.

“It's very okay, so that girls are protected from pregnancy, and they don't suffer the way I am suffering now from early pregnancy.”—*Never-user, age 17*

However, for those who did not approve of the injectable for adolescents, the most common concern was that young women, and particularly those without children, should not use the injectable because it could cause infertility. The

inappropriateness of injectable contraception for young women, nulliparous women or unmarried women was mentioned by eight women. An additional two noted that, although they personally approved of injectable use by adolescents, providers would not allow it, and a third said that she was told by a provider that she should discontinue the injectable because she had started “too young.”

“They say it [the injectable] is bad. It can destroy your eggs and you may become infertile.”—*Past user, age 19*

“We were told [at the clinic] that that drug [the injectable] does not cause any [harmful] effects, but you should use it at a specific age, like the implant...they said that it’s supposed to be used by people at the age of 20 years.”—*Never-user, age 18*

“They [adolescents] are still at school. Teachers do not allow it, and if you are in a mixed school, [using injectables] will make you start moving anyhow with boys because you will not [worry about] becoming pregnant.”—*Never-user, age 18*

• **Barriers to self-injection.** Although the reaction of adolescents to contraceptive self-injection was mostly positive, some participants (10) felt that self-injection would not appeal to adolescents their own age; others were more equivocal (10), saying that it depended on the individual. The most commonly noted barriers to the adoption of self-injection were that adolescents their age would be fearful of the needle or would inject poorly.

“They cannot manage because they will fear the needle.”—*Current user, age 19*

“I would come and receive the injection from the clinic because if you are alone, you can easily forget some of the steps.”—*Current user, age 18*

“People may do it wrongly. They may use a lot of force to inject and the needle may break. It’s worse if the needle breaks for those whose parents are not aware they are using family planning, especially if they started experiencing bad side effects. It’s not good to do it alone...I should be injected by [a] health worker.”—*Current user, age 19*

A few also noted that self-injection could be difficult to keep private if living at home with parents who are not supportive of one’s contraceptive use.

“For those who are staying with their parents, I think they should receive their injection from the health center so that it’s in secret. Unless...you have your own bedroom, but if you share a room like I do with my grandmother, you can have some fear if she isn’t aware.”—*Current user, age 17*

Facilitators of Acceptance of Self-Injection

Facilitators of adolescents’ acceptance of injectable self-administration generally took four forms: the preference for a readily reversible method of contraception, the preference for a discreet method, the convenience of self-injection and the easy-to-use nature of the device.

• **Readily reversible contraception.** Nearly half of the sample (21 individuals) were current or former users of injectable contraception, and their rationale for choosing injectables was key to the acceptance of self-injection. The short

duration and reversible nature of injectables—mentioned by 11 individuals—make the method itself attractive to adolescents; without these features, self-injection of the method would be less appealing. A number of participants discussed these advantages over the implant, which requires a provider who is trained in implant removal.

“It is easier to stop in case of any problem, not like the implant, which requires an expert for removal.”—*Current user, age 19*

“It is easier to discontinue [the injectable] after three months compared to implants, which need removal in case you want to stop using the method. And if Marie Stopes delays to come to your area, you would have to stay with the drug even if you are experiencing problems.”—*Never-user, age 18*

Conversely, a few women noted that they prefer the implant over the injectable precisely because it does not require their active engagement (by requiring that they return every three months for reinjection).

“I prefer the implant because with the injectable, if you forget to go for reinjection, you can easily become pregnant.”—*Current user, age 17*

• **Discreet use.** The injectable is often touted as a method that can be used discreetly; self-injection can be seen as a way to increase the level of discretion. Eight individuals, six of them injectable users, noted that they deliberately have not told their partner that they are using contraceptives, and two study participants noted that they chose the injectable specifically because it is an easy method to hide. A number of individuals had not revealed to anyone that they were using contraceptives; one individual noted that if she told anyone, it could get back to her husband.

Partner opposition was identified by five individuals as a reason for having discontinued contraceptive use in the past. One adolescent reported that she is not using contraceptives because her husband wants her to produce a child first, and another said that she and her husband had had a falling out over her (secret) contraceptive use.

“[I chose the injectable] because I did not want my husband to know I am using family planning. I thought if I used the implant, he would know, but this injection he cannot know.”—*Current user, age 16*

“Sometimes your husband can refuse you from using family planning. But with the injectable, you can do it secretly.”—*Current user, age 19*

“It [the injectable] can also cause domestic violence if a woman uses it secretly and the man realizes.”—*Never-user, age 18*

That said, a substantial share of adolescents who were using or had previously used contraceptives (15) had support from their partner, and in about half of those cases, he was actively involved in the decision to use a contraceptive and the choice of a method. A few participants noted that they had support from other family members, including grandmothers or more commonly, mothers.

“It’s my husband who knows that I am using [DMPA-SC]. The truth is when you are using family planning, it has to

be the decision of the two of you; that is why it is called family planning.”—*Current user, age 19*

• **Convenience.** When asked whether they thought adolescents their own age would be interested in self-injection, a slight majority (26) thought it would appeal to their peers. The two most frequently cited advantages were that adolescents could avoid making a trip to the clinic and that self-injection is more discreet.

“[It] helps a lot in saving your transport money. Then sometimes when it rains, you won’t miss your injection schedule.”—*Past user, age 17*

“Because [for] some people, their boyfriends do not allow them to use family planning. They use it in secret. And the same thing for those who are married; some men are against family planning, so women can use this one secretly when their husbands are not at home.”—*Past user, age 18*

“It’s easy, can be used in private and is simple to handle. It does not take time and there is no need of going to the hospital. [I like that I can] use it myself more privately.”—*Current user, age 19*

About one in five participants suggested that adolescents in school would be particularly interested in, and benefit from, self-injection because it is convenient and can be used discreetly. Their comments reflect the societal prohibition against premarital sexual activity, and therefore contraceptive use, among young women who are in school.

“It’s a good idea. To prevent school dropout due to unwanted pregnancy.”—*Never-user, age 19*

“It’s a good idea because you can even put it in your bag when going to school; no one will know.”—*Current user, age 15*

“This drug really keeps [its] secrets. Even school girls can go with it to school and use it without any difficulty.”—*Past user, age 18*

“For those who are at boarding school, they can even keep the drug in the box and inject themselves from school. There will be no need of getting permission from school to go for the injection.”—*Never-user, age 18*

These findings suggest that some adolescents feel self-injection enhances privacy, while others believe bringing the product home is less discreet. Whether adolescents see self-injection as enhancing or compromising privacy likely depends on context. Among the 18 adolescents who lived with parents or grandparents, about half spontaneously voiced the concern that storing the product at home would be difficult. Of those who lived with parents but did not express that concern, all but two had their own bedroom (not shared with other family members).

• **Ease of use.** After learning how to inject on a model, all but two participants reported that the injection was easy to administer. Steps that were considered challenging (each of which was identified by 1–2 individuals) were activating the device (i.e., pushing the needle cap against the port to break the seal between the needle and the reservoir), mixing the drug and transferring fingers from the port to the reservoir. Many said that

the well-illustrated client instruction booklet offered a welcome source of support.

“It was easy to use. I like the size and also it has a good needle. There is nothing I have not liked about it.”—*Current user, age 19*

“There is not any difficult step. If you can’t read, you can see from the pictures.”—*Current user, age 17*

Regardless of the possibility of self-injection, the vast majority of respondents viewed the DMPA-SC product favorably, with many commenting on the appeal of a shorter needle.

“I have liked the drug because the amount isn’t like [Depo-Provera] and the needle is smaller.”—*Never-user, age 18*

Personal Interest in Self-Injection

Half of the adolescents (23) said that they would be interested in trying self-injection if that option became available. This group of participants included five adolescents who had not previously used a contraceptive method (about one-third of the never-users).

“I am going to switch immediately. I like it very much because it will save me from spending my [transportation money], then I will continue with my house work without interruption. There’s nothing I really don’t like.”—*Current user, age 19*

“You know, young girls like us want to get the injection secretly and when you go to the health center, health workers ask you a lot of questions, which is so embarrassing.”—*Never-user, age 18*

“I am interested in self-injecting from home, because at times you can go to a village where accessing family planning services may be difficult. So, it will save your time and [transportation money] for coming back for the next injection.”—*Never-user, age 18*

One-third of the adolescents were situated at the other extreme, expressing no personal interest in self-injection, or expressing reservations about using injectable contraception more generally. Of those who embraced the injectable but not self-injection, most indicated either a fear of needles or concern that they might make a mistake. Their preference, if using the injectable, would be provider administration. Half of those who had not used a contraceptive method previously fell into this category.

“I prefer to be injected by a health worker because I fear injecting myself. Just the sight of the needle brings fear.”—*Current user, age 19*

“I do not fear self-injection but am afraid of the injectable [the drug].”—*Current user, age 19*

Finally, a small share of adolescents were uncertain if they would try self-injection; they expressed some reservations and wanted reassurance that health workers would provide adequate training and support.

“I would accept to inject myself but its disadvantage is also there. You can inject yourself and get a problem.... If I have the knowledge and the health worker has told me to come back in case I get a problem, then I would prefer to inject myself.”—*Never-user, age 18*

DISCUSSION

The results from in-depth interviews with adolescents in Uganda about contraceptive self-injection indicate that this delivery modality has the potential to increase access and use for this underserved population, and should be considered one of a range of methods and delivery modes in adolescent-friendly contraceptive services. The results are generally consistent with the expectations of stakeholders, who anticipated that adolescents would welcome self-injection.²⁸ Our findings also echo those from a study of self-administration of DMPA-SC by adolescents in the United States, which found that more than half of participants who were offered the opportunity to try self-injection opted to do so.²⁶ And, as in our study, adolescents who declined lacked confidence in their ability to give the injection properly or were fearful of needles.²⁶

Adolescents' misinformed concerns about the health risks of contraceptives, and the injectable in particular, are likely to limit the adoption of self-injection. These concerns are by no means limited to adolescents; they are persistent and pervasive among older women as well.²⁹ Our finding, echoed in other studies,³⁰ of a persistent misperception that injectable contraception can cause infertility among nulliparous women, is particularly pertinent for injectable use and self-injection among adolescents. A first step toward addressing contraceptive myths and misperceptions among Ugandan youth would be to remove the ban on comprehensive sexuality education in schools that was put in place in 2016 by the Ministry of Gender, Labour and Social Development.³¹ More generally, however, cognitive science research suggests that providing correct information (through simple messaging via trusted sources) that offers alternative explanations to replace myths (without restating or refuting the myths directly) is a promising approach to addressing this persistent challenge.²⁹

Myths about contraceptive methods may also be perpetuated by providers.³² Provider opposition to adolescents' use of the injectable (as well as other contraceptives), and more generally premarital sexual activity, remain major obstacles for delivery of adolescent-friendly contraceptive services, as reported by many of our participants. Although some adolescents in our study expected that self-injection could enhance confidentiality, it is likely that the initial consultation and self-injection training would involve some level of provider interaction—especially in the short-term, while self-injection programs are relatively new. To ensure that this innovation reaches adolescents, training all family planning providers in adolescent-friendly contraceptive services is vitally important and will need to be reinforced through supervision, job aids and mentoring to ensure behavior change.³³ A recent review of adolescent-friendly contraceptive services best practices also underscores the importance of using multiple service modalities to reach adolescents;³ therefore, self-injection

should be offered by a range of providers, including those based at facilities as well as community health workers; mobile outreach services; and staff in accredited pharmacies and drug shops. A recent analysis shows that about one-half of adolescents in Sub-Saharan Africa, Asia and Latin America obtain contraceptives from private-sector sources, including pharmacies.³⁴

A related priority for the rollout of robust, adolescent-friendly self-injection programs will be ensuring that providers have a clear, practical understanding of both the WHO Medical Eligibility Criteria for Contraceptive Use and the importance of informed choice for adolescents. However, the Medical Eligibility Criteria include cautions regarding the possibility of bone mineral density depletion for adolescents using DMPA, as well as a potential increased risk of HIV acquisition for women using DMPA.^{17,18} In both cases, WHO states that the benefits of injectable use for adolescents and for women at high risk of HIV generally outweigh the risks.¹⁷ The risk related to bone mineral density depletion associated with DMPA use must be balanced against the risk of impaired bone mass accrual in adolescents due to the state of pregnancy itself, and the risks of HIV infection balanced against the risks associated with unintended pregnancy.³⁵ Providers offering contraceptive self-injection will need to be equipped to discuss these issues appropriately with all of their clients, including adolescents. As noted in a recent call to action by a civil society working group on hormonal contraception and HIV, "It should not be at the discretion of the health care provider to determine who should be informed about the possibility of risk. Instead we propose that all women seeking contraception or protection against STIs and expressing interest in injectable methods should be advised in a wholly respectful, nonjudgmental, routine way of the possibility of associated risk."^{36(p.1-2)}

Like any other new contraceptive option, self-injection will not be a panacea for the many barriers that adolescents face in obtaining contraceptives. A full range of contraceptive methods should be a hallmark of any program offering adolescent-friendly contraceptive services. Although there is increasing evidence that some adolescents will use long-acting reversible contraceptive methods, like implants, when they are available,^{37,38} our results suggest that many adolescents still prefer more easily reversible methods, particularly given common misperceptions about side effects and persistent concerns over the safety of modern contraceptive methods. Likewise, although providers often prefer to offer condoms to adolescents as a primary contraceptive option, experience with condoms was quite limited in our sample. This likely reflects the reality that condom use can be challenging for adolescent girls to negotiate, given its association with HIV and consequent perceptions of possible infidelity. Finally, these results underscore that self-injection is not for everyone; even among experienced injectable users, there will be adolescents who prefer not to self-inject because of a simple fear of needles.

Study Limitations

The necessity of interviewing only minors who were emancipated (among those younger than 18) made it difficult to recruit unmarried, younger and nulliparous adolescents, which may have shaped our findings in unknown ways. By definition, emancipated minors are more independent from parents than the average adolescent. As with all qualitative studies, our findings are not generalizable and may not apply to other settings in Uganda and other countries. Moreover, our approach to contacting adolescents—targeting clinics and youth facilities that serve adolescents—likely resulted in the recruitment of adolescents who may be more motivated to seek help or engage with organizations, and whose perspectives and behaviors may differ from those of other adolescents. Finally, adolescents in this study did not inject themselves, and might have felt differently about self-injection (either positively or negatively) had they had that opportunity.

Conclusions

Some adolescents, including a number who had never used contraceptives before, were enthusiastic about the concept of self-injection. The potential for discreet use and user control inherent in the practice of self-injection aligns with well-established adolescent priorities for contraceptive services. Adolescents' needs and interest should be an explicit focus as family planning policymakers and program implementers design, implement and evaluate self-injection interventions.

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RESUMEN

Contexto: Se estima que en Uganda, una de cada cuatro mujeres adolescentes ha comenzado a tener hijos. Muchos embarazos en adolescentes no son planeados debido a importantes barreras en el acceso a anticonceptivos. El anticonceptivo inyectable es el método más comúnmente utilizado en Uganda y una nueva versión subcutánea ofrece la posibilidad de reducir las barreras de acceso al ofrecer una opción de autoinyección. Sin embargo, se necesita más información sobre las actitudes y el interés de las adolescentes en lo relativo a la autoinyección.

Métodos: En 2015, se realizaron entrevistas en profundidad con una muestra intencional de 46 mujeres adolescentes de 15–19 años, de zonas rurales y urbanas del distrito de Gulu. A las encuestadas se les preguntó acerca de sus características demográficas, experiencia con anticonceptivos y opiniones acerca de la anticoncepción inyectable; luego se les presentó el acetato de medroxiprogesterona de depósito subcutáneo (AMPD-SC) y se les capacitó sobre cómo administrar una inyección usando un modelo. Posteriormente se les preguntó su opinión acerca de la autoinyección de anticonceptivos. Las entrevistas fueron transcritas y analizadas cualitativamente para identificar temas relevantes.

Resultados: Aunque, en general, el inyectable fue considerado de forma favorable, algunas adolescentes expresaron sus

reservas sobre la idoneidad de la anticoncepción inyectable para su grupo de edad. La preocupación más común fue el miedo a la infertilidad. La mayoría consideró que la autoinyección sería una opción atractiva para las adolescentes debido al ahorro en tiempo y dinero, así como por la naturaleza discreta de la inyección en el hogar. Las barreras para la autoinyección incluyeron temor a las agujas, el potencial de cometer un error y la falta de privacidad en el hogar.

Conclusiones: La autoinyección anticonceptiva tiene el potencial de aumentar el acceso y uso de anticonceptivos entre adolescentes en Uganda y debe considerarse como una modalidad de distribución en el contexto de los servicios anticonceptivos amigables para adolescentes.

RÉSUMÉ

Contexte: En Ouganda, on estime qu'une adolescente sur quatre est enceinte ou déjà mère. Beaucoup de grossesses d'adolescentes ne sont pas planifiées et résultent d'importants obstacles à l'accès à la contraception. La contraception injectable est la méthode la plus courante en Ouganda, où une nouvelle version sous-cutanée offre la possibilité de réduire les obstacles à l'accès en proposant une option d'auto-injection. Les attitudes des adolescentes et leur intérêt à l'égard de l'auto-administration ne sont cependant guère documentés.

Méthodes: En 2015, des entretiens en profondeur ont été effectués avec un échantillon par choix délibéré de 46 adolescentes âgées de 15 à 19 ans dans les zones rurales et urbaines du district de Gulu. Les répondantes ont été interrogées sur leurs caractéristiques démographiques, leur expérience de la contraception et leur opinion concernant la contraception injectable. Le DMPA-SC (acétate de médoroxiprogesterone en dépôt sous-cutané) leur a ensuite été présenté et elles ont été formées à la pratique de l'injection sur un modèle. Elles ont ensuite été invitées à donner leur opinion sur l'auto-injection contraceptive. Les entretiens ont été transcrits et analysés qualitativement pour en identifier les principaux thèmes.

Résultats: Malgré une opinion généralement favorable du contraceptif injectable, certaines adolescentes ont exprimé des réserves quant au bien-fondé de cette approche contraceptive pour les adolescentes. La plus grande préoccupation était la peur de la stérilité. La majorité voyait dans l'auto-injection une option attrayante pour les adolescentes, en raison du temps et de l'argent épargnés et de la discrétion de l'injection à domicile. Les obstacles étaient la peur des aiguilles, le risque d'erreur et le manque d'espace personnel à la maison.

Conclusions: L'auto-injection contraceptive a le potentiel d'élargir l'accès à la contraception et sa pratique chez les adolescentes d'Ouganda. Il convient d'y voir une modalité de prestation dans le contexte des services contraceptifs adaptés aux adolescentes.

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