

A Qualitative Exploration of Factors Explaining Non-Uptake of Hormonal Contraceptives Among Adolescent Girls in Rural Ghana: The Adolescent Girls' Perspective

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Background: Adolescent pregnancy remains a public health concern globally. The use of hormonal contraceptive methods are proven ways of preventing pregnancies and in turn unsafe abortions. However, research shows that use of hormonal contraceptive methods is rather low among African adolescent girls, of which Ghana is no exception.

Objective: This manuscript uses the socio-ecological model to guide our understanding of the factors associated with non-use of hormonal contraceptives among adolescent girls in Ghana.

Methods: An explorative study was done using qualitative data collection methods. Two focus group discussions and sixteen in-depth interviews were conducted among adolescent girls aged 15–19 years (N = 38) in the Kintampo area of Ghana to determine factors affecting uptake of hormonal contraceptives.

Results: Adolescents showed a lack of in-depth knowledge related to the different hormonal contraceptive types. Negative attitudes towards adolescent hormonal contraceptive use, fear of real and perceived side effects of hormonal contraceptives, lack of self-efficacy to use contraceptives, fear of disclosure of use and fear of societal stigma related to sexual intercourse and its related issues among adolescents may explain why adolescent girls in this context do not use hormonal contraceptive methods.

Conclusion: To promote hormonal contraceptives among adolescent girls, a combination of multifaceted social-psychological, personal and community level interventions are needed.

Keywords: hormonal contraceptives, adolescents, Ghana, behavioral determinants, pregnancy prevention, qualitative research

Introduction

Adolescent pregnancies remain a public health concern globally.¹ The greatest proportion of adolescent pregnancies occur in less developed countries and mostly among those with no education and those from poorer households.² It is estimated that around 21 million adolescent girls between 15 and 19 years of age get pregnant annually in developing countries.^{3,4} Further projections indicate growth in adolescent pregnancies globally by the year 2030 mainly due to the ever-growing adolescent population worldwide especially in African countries.⁵

Pregnancy and childbirth among adolescents have both health and social ramifications. Health-wise, pregnancy and delivery complications are the leading causes

of death for girls 15 to 19 years worldwide.⁶ Babies born to adolescent mothers have elevated risks of childhood morbidities and mortalities.⁷ Socially, adolescents who become pregnant face stigmatizing or other negative responses from people within their environment, including their family members and friends, as well as the health care setting.^{8,9} They often tend to practice unsafe abortions in countries with restrictive abortion laws,¹⁰ which may cause several complications with permanent health consequences or even death.^{4,11} Globally, around 3.9 million unsafe abortions occur among 15 to 19-year-old girls each year.⁴ Additionally, adolescent pregnancy interferes with the girls' future education and limit opportunities for employment.¹²

The use of contraceptive methods have been proven to prevent unwanted, early pregnancies and in turn unsafe abortions.¹³ However, research shows that the use of effective contraceptive methods is rather low among sexually active African youth, including Ghanaian youth,¹³ with even lower rates among rural area dwellers and those in the lowest wealth quantiles.¹⁴ Available data suggest that the use of condoms is relatively more common among adolescents compared to the other birth control options because of its ready availability and low cost.¹⁵ However, though condoms prevent pregnancy and sexually transmitted infections (STIs), depending only on condoms for protection bears several risks, especially for the girls. Condoms can only be an effective way of protection when used correctly and consistently. For correct condom use, one relies on the partner's willingness to use them, but this can be a challenge for adolescent girls, who lack the skills and competences for condom use negotiation.¹⁶ Moreover, in stable relationships, research reports decrease in consistent condom use over time, relating their use with being loose or not trustworthy.¹⁷ For maximal protection for adolescents therefore, the dual method approach; ie, using condoms and a hormonal contraception seems the best option.¹⁸

While there is an extensive body of scientific literature on factors influencing condom use,^{19,20} studies focusing on factors that influence hormonal contraception use are limited. To be able to address the problem of low hormonal contraception use, a clear understanding of all related individual and environmental factors is needed. We therefore carried out a qualitative study to understand the barriers to hormonal contraceptive uptake among adolescent girls in Kintampo, a rural Ghanaian community, which has a high annual births by adolescent (15%),²¹ a rate above

the national average of 14%.²² Yet, hormonal contraceptive use among adolescents is low with an estimated prevalence of 13% among sexually active girls.²³

This manuscript uses the socio-ecological model²⁴ to guide our understanding of the factors associated with non-use of hormonal contraceptives among adolescent girls 15 to 19 years of age in the Kintampo area of Ghana. The socio-ecological model posits that human behavior is influenced at multiple interacting levels, including the individual/intrapersonal, the interpersonal, the community, the institutional and the public policy levels.²⁴ In this study, we have focused on the individual, interpersonal, community and institutional level factors. Individual level factors influencing hormonal contraceptive use in adolescents have been related to poor understanding of several aspects of hormonal contraceptive use, including the different types of hormonal contraceptives available and how the methods work,²⁵ poor knowledge on side effect,²⁶ and poor knowledge on cost and legality of use.²⁷ Also, limited awareness of methods perceived to be right for adolescents, poor knowledge on sources of obtaining the methods, poor self-efficacy and skills to use the method, have been related to poor uptake of hormonal contraceptives.²⁸ Moreover, poor compliance, negative experiences with specific hormonal contraceptive methods (eg, extreme bleeding related to use of implants), fear of side effects of specific methods and fear of related health risks of hormonal contraceptive use in general, have been associated with low uptake.²⁹⁻³¹ In addition, Adolescents' fear of negative stigmatizing responses related to early sex and contraceptive use from their parents, peers, religious leaders amongst others have been reported to negatively affect hormonal contraceptives use amongst them.^{16,32-34}

At the interpersonal and community levels, varied social norms exist in different cultures³⁵ and they either motivate or demotivate the performance of certain behaviors.³⁶ Societal norms related to sexual morality in many African cultures disapprove of all forms of illicit sex.³⁷ People who deviate from societal norms face undesirable responses including ostracism and stigmatizing responses.³⁷ Studies have reported that, social norms that discourage premarital sex and contraceptive use, negatively affect intentions to use,³⁸ as well as actual modern contraceptive use amongst adolescents.³⁹

At the institutional level, lack of access to youth-friendly health facilities, poor health professional-patient relationship, lack of privacy and confidentiality at health

facilities, lack of in-depth discussions during consultation, and cost of hormonal contraceptive methods^{15,29} affect use of hormonal contraceptive methods.

Next to empirical findings on factors explaining non-use of hormonal contraception, several health-behavior related theories may provide additional explanations.^{40–42} Applying the Health Belief Model (HBM), adolescents may not be using hormonal contraceptives because they do not perceive themselves as susceptible to unwanted pregnancy. Also, they probably do not perceive the consequences of unwanted pregnancy as severe and do not believe in getting any potential benefit from using hormonal contraceptives.

Further, adolescent's perceived barriers to hormonal contraceptive use, and lack of self-efficacy to use, may explain why adolescents do not use hormonal contraceptive methods. This is evidenced by findings from Hall's systematic review of literature in using the HBM to guide the understanding of modern contraceptive behaviors and practice with in the general population.⁴⁰

In-depth information on factors influencing uptake of hormonal contraceptive methods in Africa is limited in general and more so in sub-Saharan Africa.⁴³ Besides, majority of scientific publications do not differentiate in their outcome measure between hormonal contraceptive methods and other non-hormonal contraceptive methods including condoms.¹⁵ In this qualitative paper, we explored the factors that limit uptake of hormonal contraceptives from the perspective of adolescents in the Kintampo area of Ghana.

Methods

Study Area Description

This study was conducted in the Kintampo area, which is situated within the forest-savannah transitional ecological zone in the Bono East Region of Ghana. It covers an area of about 7162 Km² with an approximate resident population of 150,000. The population is youthful with over 45% under the age of 15 years.⁴⁴ About 40% of adolescents 15 to 19 years of age are sexually active.²³ With a total fertility rate of 4.7 births per woman, 15% of annual births are attributed to girls 13 to 19 years of age.²¹ Contraceptive prevalence among adolescents (10–19 years of age) is 25%.⁴⁵ The male condom is the most commonly used contraceptive method (82%) among adolescents in this region while hormonal contraceptives are only used by about 13% of sexually active girls.²³

Study Design

This was an explorative study using qualitative data collection methods from April to June 2018. Two focus group discussions (FGD) made up of 10 and 12 respondents respectively and sixteen in-depth interviews (IDI) were carried out among adolescent girls to determine factors that negatively affect the uptake of hormonal contraceptives amongst them. Both methods were used because the IDIs are effective at generating in-depth, personal and private information; complimented by FGDs that produce interesting group outputs, showing divergence or convergence of opinions between the group members.^{46,47}

Study Population and Description of Participants

The study included 38 adolescent girls aged 15 to 19 years ($M = 17.0$ $SD = 1.1738$). Thirty-six out of the 38 girls had been to school with the highest level of educational attainment being Senior High School (15/36). The remaining 21 girls either had a primary level or junior high school level of education. Two girls had never been to school. About half of the girls (18/38) lived with both parents; the others (20/38) either lived with a single parent, other relatives, or lived by themselves. Most participants were Christians (34/38) and the four others were Muslims. About two thirds (23/38) had a boyfriend at the time of data collection. For pregnancy prevention, a few (5/38) used the male condom. Others also used rhythmic and withdrawal methods. None of the participants stated to have ever used hormonal contraception.

Description of Study Tools

An interview guide made up of semi-structured questions was used for data collection. Guides for both the FGDs and IDIs contained the same questions. The guides were developed based on an extensive literature review of the factors that are reported to be associated with hormonal contraceptive use among adolescents globally, guided by the Socio-Ecological model. The interview guide was structured thematically under sections such as awareness of hormonal contraceptive options and their mode of action, attitudes to hormonal contraceptives, normative perceptions about hormonal contraceptive use among adolescents, and community norms. The data collection tools were pre-tested among some adolescents in the study area and necessary contextual adjustments were made before data collection.

Recruitment and Data Collection Procedure

Participants were purposively selected from two Senior and one Junior High School (20 girls), two adolescent health corners (10 girls), and three dressmaking parlors (8 girls) in the Kintampo Municipality and South District. Verbal announcements about the study were made in the recruitment centers. In the schools, we asked permission from the head teachers to talk with the girls in their classrooms. We shared information about the study, which comprised a summary of the study objectives (ie, identifying reasons for non-use of hormonal contraceptives among adolescent girls to inform interventions to promote hormonal contraceptive uptake and to prevent teenage pregnancy) and study procedures (ie, either taking part in a focus group discussion or in-depth interview), and we explained how to enroll into the study; by writing their names and phone numbers on a piece of paper that was left behind.

Prospective respondents were given up to a day to re-think about participation, after they signed up for the study. Inclusion criteria were based on age (ie, between 15 and 19), educational background (primary, junior high and senior high schools and those without the education), and non-use of hormonal contraceptives. Any adolescent who reported ever having used hormonal contraceptives was not included in the study. The IDIs and FGDs were done face to face in either English or the local language (Twi), depending on the preference of the participants. The first FGD was held at a school premises in a designated room free from intrusion. The second FGD was held at a church premises. IDIs were held at school premises, youth health centers, and participant's homes. The discussions were facilitated by a female social scientist guided by an interview guide. Right before the start of the interview participants were again reminded of their rights given in the written informed consent forms. For participants less than 18 years, consent was provided by their teachers if interviews were done in school or parents if interviews were done at home, in addition to their individual assent. Participants received copies of their signed consent forms.

On average, an IDI lasted between 25 and 35 minutes whilst an FGD lasted between 60 and 90 minutes. All interviews were audio-recorded and transcribed verbatim, with those in Twi, further translated into the English language. The moderator sought the consent (through signed written informed consent) of respondents before recording and taking notes of all discussions. After conducting two FGDs and

15 IDIs, no new themes emerged and so data saturation was reached. Data collection ended after one more IDI was done.

Data Management and Analysis

ATLAS.Ti version 8.4.2 qualitative data analysis software was used in managing and analyzing data collected. All eighteen transcripts (2 FGDs and 16 IDIs) were exported from MS word into ATLAS.Ti and thematic analyses were done. Guided by the grounded theory technique, an inductive approach was used to identify major themes that emerged from the data.⁴¹ Two members of the study team (first and second author) independently reviewed the first three transcripts and formulated preliminary codes, guided by the objectives of the study. Iterative reviews were done between the two team members to identify other sub-themes and discussion were held when coding differed until agreement was reached. Established codes were then applied to all transcripts for final analysis by the first author. All code summaries were again reviewed and discussed by both the first and the second author. For the transcripts review process, participant data related to their names were de-identified.

Electronic files containing the audios and transcripts from the study have been stored in password-protected computers.

Results

Reasons for non-use of hormonal contraceptives are presented below structured by the different levels of the socio-ecological model. Quotes from both focus group discussions and interviews are included to illustrate major themes. The opinions expressed by adolescents on their perceived barriers to hormonal contraceptive use were not different for both in-depth interviews and focus group discussions, hence, results were merged. It is worthy to note that the adolescent girls used the terms family planning and contraceptives loosely to refer to hormonal methods such as the pill, injection and the implant. So even if the girls did not specifically refer to the word "hormonal" in the illustrative quotes, the methods they mentioned refer to what we consider as hormonal methods.

Individual Level Factors of Influence

Awareness and Knowledge of Hormonal Contraceptive Methods

Almost all the girls had heard of hormonal contraceptive methods, which they also called family planning methods.

The majority of them could mention at least one form of hormonal contraceptive method. The injection and the implant were the most common methods mentioned. However, even though most participants were aware that hormonal contraceptive methods exist and are used by women in their reproductive age to prevent pregnancy, they could not explain their exact mechanism of action. A typical misconception was that hormonal contraceptives destroy the man's sperm making it incapable of impregnating a woman.

When you use it and you have sex, it destroys the man's sperm so that it cannot impregnate you (18 year old girl in FGD)

Knowledge of Where to Get Hormonal Contraceptives

Almost all the girls knew at least one source for obtaining a hormonal contraceptive method. Hospitals were the most frequently mentioned source and then clinics, pharmacy shops, and drugstores (when prompted). The preferred source of hormonal contraceptives was stated as the hospitals because hospitals are more equipped with personnel and equipment.

How can someone obtain a hormonal contraceptive method if they want to? ... through hospitals and some drugstores but going to the hospitals is more relevant than the drugstores. (IDI 16 year old girl)

Few girls stated to not know where one could obtain the hormonal contraceptive method.

Knowledge of the Cost of Hormonal Contraceptive Methods

About half of the girls did not know how much it costs to get a hormonal contraceptive. Most of those who claimed to know only speculated that it was not expensive.

R: Please it is not all that costly, it is not costly. Anyone who wants to do it the person can be able to afford and just do it straight. (IDI 19-year-old girl)

Only one girl could attribute a price to the (removal of) the implant and few knew some organizations provide it for free.

Madam it is free. If you want to go and take out the implant, they will take 30 Ghana Cedis from you. (18 a year-old girl in an FGD)

A few of them mentioned that in their opinion, hormonal contraceptives are expensive and said they presumed the cost deterred people from accessing it.

Attitude Toward Hormonal Contraceptive Use

Most of the girls who were interviewed had positive attitudes toward the use of hormonal contraceptives in general but tended to be more negative when it was about adolescents using it. They said that it helped to prevent unplanned pregnancy, especially teenage pregnancy; therefore, users could work, have peace of mind, complete school, or finish a trade they were learning. Mostly among married women, they felt it is very useful for spacing their children. They indicated that hormonal contraceptives could be used by the married, unmarried women and young girls in relationships.

It is good ... people use it to prevent unwanted pregnancy. Some people had unplanned pregnancies so to plan for the next pregnancy they use the family planning methods. This is because if they are unable to space their birth, they find it difficult to take care of the children. (IDI with an 18-year-old girl)

However, the use of hormonal contraceptives among married women was more acceptable to most girls compared to unmarried adults and young girls. They said that adolescents who used contraceptives did not think, or had no good morals; they liked sex, they had no self-control and were promiscuous. The girls were also of the opinion that adolescents who used hormonal contraceptives may become sick or infertile and so they hurt themselves by using the methods. These perceived side effects were also the most often mentioned disadvantages of hormonal contraceptive use.

... I feel that they don't have good morals or they can't live a chaste life that is why they go for contraception ... some people say that the contraceptives are not good, you can't have children after using it. So if I see them using it, I feel that it's is very bad for a young girl like me to use contraceptives. (IDI with a 16-year-old girl)

Other respondents did not see anything wrong with adolescents using contraceptives. They said it is a way of securing their future. Using contraceptives would help them to prevent teenage pregnancy, to be able to complete their school or whatever trade they were learning. They also said it is always better than abortion and that some adolescents have already given birth and may like to prevent a second child from coming so it is good for those to use contraceptives.

Self-Efficacy in Organizing and Using Hormonal Contraceptives

A few of the adolescents expressed self-confidence in their ability to use hormonal contraceptives, should they want to. They claimed to know the benefits they would derive from using contraceptives and so if they decided to use it, they could. In contrast, most respondents said it would be very difficult for them to get a method if they wanted to. The adolescents indicated that they would have a negative feeling obtaining a hormonal contraceptive method from a pharmacy shop, clinic or hospital. They attributed this feeling to their perceived provider's negative reaction towards them. They all stated that providers would ask them a lot of questions including why they had come for a contraceptive method at this age, how old they were, what they were using "those things" for amongst others. They also felt the providers would think of them as bad girls and judge them because of their young age.

As for me, I will feel very shy. They will ask you several questions. They will say you are too young. What are you using this pill for or why are you coming for this implant? (IDI with a 17-year-old girl)

In addition, the girls feared providers would breach the confidentiality of their use of hormonal contraceptives. These negative feelings they said will make it very difficult to seek for hormonal contraceptive methods. The quotation below illustrates this feeling

They will ask you what you have come there for and when you tell them and you leave the place, they will also tell other people. Maybe those people cannot also keep secrets so very soon people will start pointing their fingers at you when they see you passing. When that happens, I will not do it. (IDI with 17 year-old girl)

However, most of these responses were based on the girls' expectations. Only one girl confirmed to have experienced such responses from a provider.

Besides all these worries, one girl stated it would only be difficult the first time attending a clinic. After that, the people would know why she comes and stops asking the questions.

Fear of Perceived Hormonal Contraceptive Side Effects

Almost all adolescents had some form of misconceptions about contraceptives. They described several negative effects attributable to contraceptive use including infertility, sickness, extreme weight gain or weight loss (ie, you gain weight if the methods fit you or lose a lot of weight if

it does not fit you), changes in the menstrual cycle and colour of blood, heavy bleeding, spotting, constant bleeding, amenorrhea, dysmenorrhea, amongst others. Other issues mentioned include body weakness, dizziness, fainting, blood clots during menstruation, miscarriages, and becoming epileptic.

... I have heard that someone went to insert one (the implant) and when she came back to work with it, she collapsed and since that, she is been epileptic. (18-year-old girl in an FGD)

Specifically, for the implant, they said it could dislodge to other parts of the body.

I know one lady who was using the implant. When it was time for her to get married, the thing had made her grow so fat so they went to the hospital to get the thing out but they could not find everything. One of them was missing and they could not find it. (17-year-old girl in an FGD)

Moreover, some of the girls expressed a strong fear of the side effects of hormonal contraceptives. This fear emanates from unpleasant experiences other people have had from the use of hormonal contraceptives. The thought of these perceived side effects deterred them from using the methods.

I had a friend who was using it (implant) but it was worrying her so she took it out and then later she became pregnant but she had a miscarriage. So, when we went to the hospital, they said it was because she was using the hormonal contraceptive method that was why she lost the baby. The implant got mixed in her blood. (18-year-old girl in an FGD)

In line with this, it came out strongly that adolescents were better off using short-term methods, to prevent risks related to using long-term methods.

... It is just that I think we should not use the long term methods like the one for five years. At least you can take the monthly injections. (17-year-old girl in an FGD)

However, one girl stated the need to switch between methods if one experienced an unpleasant effect.

A friend of mine said when she did it initially (took the injection), it was good but later her bleeding pattern changed from one week to days ... and she grew very fat. After some time, she had severe lower abdominal pain. Then later, she lost weight and began to faint ... she said it is the injection. So, she stopped and she is now using the pills and all those effects stopped. (18 year old girl in an FGD)

Anticipated Disclosure of Hormonal Contraceptive Use

The girls had divergent views about openly disclosing their use of hormonal contraceptive methods. Most of them expressed lack of willingness to disclose their hormonal contraceptive use. They would be worried for people, including their friends, to find out they used hormonal contraceptives. They feared people who would find them using hormonal contraceptives would perceive them to be bad girls, hence spreading rumours about them. This they indicated would make them feel bad, shy and embarrassed.

Oooh ... ! in my school when they saw someone using contraceptive they started gossiping about that person. They said the girl can't live a chaste life. They even think that she is a prostitute. So, I will not like to use it so that people will talk bad about me. (IDI with a 16-year-old girl)

However, for some girls, it would not be a problem if people close to them (mothers or sisters) got to know about their hormonal contraceptive use because they could trust them to keep it as a secret.

Interpersonal Factors

Peer Influence

Participants "learn" a lot about hormonal contraceptives from chatting with their friends and the opinions and stories (whether true or false/gossiping) told by these friends appeared to have quite some influence on their decision to use, considering examples they provided. The often mentioned negative opinions of friends had a lot of overlap with the misconceptions about the side effects of hormonal contraceptive use (eg, it harms you, causes health problems, etc.).

For me it is because of the lady who went to do it and the thing got missing in her arm. I hear it makes you so fat and the thing can get lost in the body. That is why I have decided not to use it. (FGD with 15 to 19-year-old girls)

The positive opinions expressed by friends were that hormonal contraceptive is good, protective, helpful, gives you good curvy shape, helps in finishing school, and shows you take responsibility. However, on the other hand, when asked about the influence their friends had on them, they tended to strongly state they did not care and some gave examples of how their opinion was contrary to those of friends.

Parents' Influence

Almost all the adolescents reiterated that their parents would be very displeased if they found them using hormonal

contraceptive methods. They anticipated their parents would think of them as very bad girls mostly because they are not of age to have sex in the first place. It is perceived as sinful behavior and being disrespectful towards the parents. Their parents would be disappointed in them, they would nag, scold them, may refuse to pay their school fees or even drive them away from home. These reactions from their parents would, in turn, make the girls feel shy and embarrassed.

I think they will drive me away from home ... they will say I am a bad girl. They will think that you have sex and you have a boyfriend. They will insult you and you won't feel happy. They will embarrass you and they will refuse to pay your school fees. They will ask you to let your boyfriend pay for your fees. (IDI with an 18-year-old girl)

However, a few of the girls were more positive (ie, it's better to use hormonal contraceptive than becoming pregnant) especially when they would first discuss it with their mothers before going for a method. Once they did that they were sure their mothers would not have a problem if they got to know. They, however, alluded to the point that if they did it without pre-informing their parents, the parents would be angry at them.

Anticipated Response from Partner

Some of the girls who were asked to anticipate the opinion of their boyfriends on their use of hormonal contraceptive methods had different responses. They mostly did not think that their boyfriends would react negatively towards them for protecting themselves. Indeed, some mentioned that they thought their boyfriends would be happy if they found that they were using hormonal contraceptive methods because they could have sex without worrying about pregnancy.

Oh nowadays, as for the boys, they like girls who use it. Hahhahhaa ... I think they will be happy because as you have sexual intercourse, they know that nothing will come out of it. (IDI with a 16-year-old girl)

One girl stated that her boyfriend's displeasure about her using a hormonal contraceptive method did not matter to her. As illustrated below

That means he will not touch me hahhaahaaa ... I will tell him the reason why I did it and if he doesn't agree, then that means he won't touch me haha haha. (IDI with a 19-year-old girl)

One girl strongly stated that her boyfriend would not be happy, especially when she does not discuss it with him in advance.

Community Factors

Role of Religion

The majority of the girls stated that (their) religion (Christianity or Islam) is against the use of hormonal contraceptive, especially for adolescent girls. It is considered a sin, against the will of God. It resembles an abortion and it is against God's planned number of children for you.

Some Christians like "Gyidi" people, they cannot use it because they are always giving birth so they cannot use it ... They say it is sinful ... it is against their religion. They say that The Bible indicates that we should have as many children as the sea sand so assuming that God has given you eight children and you continue to use the family planning so that you give birth to only 3 children, it is sinful. (19-year old girl in an FGD)

I also know an Islamic lady who went to do it and her husband was angry with her. Because it is something they don't like, her arm began to rot. I don't think it is the method that resulted in her arm rotting but I think it is because her husband spoke against it ... she went to take it off and the rotting stopped. (17-year-old girl in an FGD)

Almost all of them indicated their religious leaders would be disappointed in them if they got to know they used contraceptive methods. They expected their Pastors and Imams would see them as very bad girls who refuse to abide by the teachings or rules and regulations of the religion on the abhorrence of early and pre-marital sex including contraceptive use.

They will think that you are not religious and then as a child, they always advise us to live a chaste life before marriage so they won't be happy with you. They think that since you are using the family planning method you have a boyfriend. (IDI with a 16-year-old girl)

One of the girl said she may miss out on an opportunity to get married because her Imam would not recommend her in case there was such an opportunity. They declared these responses will make them feel bad, sad, refuse to go to church or even put a stop to their contraceptive use.

if a man is looking for someone to marry. he will say I am a bad girl so he won't recommend me. He will say that I am having sex that is why I am using contraceptives.

I will miss opportunities because he will recommend another person. (IDI with an 18-year-old girl)

Perceived Community Norms

Almost all the girls perceived that the community would react negatively to their contraceptive use. They maintained that society sees contraceptive use as a preserve of only married adults therefore children are not supposed to use them. Consequently, children who use them are considered as bad girls and promiscuous and some of them may get insulted for that. They also professed that if people should see them using contraceptives, they would spread rumors about them in the community.

... in the Ghanaian society when they see you using those things, they will say that ah this child, how can a child like you be using family planning? Hhaahaahaa you are a town helper (IDI 16-year-old girl)

Only two girls seemed to be more resilient and stated that "we need to quit the shyness" (as getting pregnant is still worse) and "no please it (ie, their opinion) will not affect me".

Discussion

Using in-depth interviews and focus group discussions, we determined factors that negatively affect the use of hormonal contraceptives among adolescent girls in the Kintampo area of Ghana who reported that they had no experience in the use of hormonal contraceptives. Non-use of hormonal contraceptives among the adolescents was explained by a combination of individual-, interpersonal, community and institutional-level factors. At the individual level, poor knowledge of the different hormonal contraceptive types and their mode of action, negative attitudes towards adolescent hormonal contraceptive use, lack of self-efficacy to organise hormonal contraceptives, fear of real and perceived side effects of hormonal contraceptive use and fear of disclosure explained why the sexually active adolescents in this study did not use hormonal contraceptives. The interpersonal, community and institutional levels showed a strong association between social normative beliefs and hormonal contraceptive use amongst adolescents. Disapproval of hormonal contraceptive use, both expected and actual, by parents and peers, and societal disapproval and stigma toward pre-marital sex and contraceptive use by the community and religious groups, explained why adolescent girls in this study did not use hormonal contraceptive methods.

Our results showed that adolescents in this study had superficial knowledge on hormonal contraceptives. Though they could mention some hormonal contraceptive methods, their knowledge on the mode of action of these hormonal contraceptive methods in preventing pregnancy was poor. Studies have generally reported in support of our study the low levels of detailed knowledge of hormonal contraceptive among adolescents from different parts of the world,⁴⁸ as well as the negative impact that lack of knowledge has on (hormonal) contraception use.^{30,48} A lack of knowledge may be explained by the fact that young people are often not given clear, correct and full information regarding matters of sex and sexuality at home and at school.^{48,49} In the Ghanaian context, issues related to sex are practically not discussed at home and are sketchily taught as part of a few core and elective subjects in school.⁵⁰ This may explain why the adolescents in this study did not have in-depth knowledge about the different hormonal contraceptive methods and consequently, did not use them. To improve adolescents knowledge on hormonal contraceptives, efforts should be geared towards provision of in-depth knowledge about hormonal contraceptive types, mode of action and side effects to adolescents when they visit the facility for contraceptives and also through mass media and school health programs.

A negative attitude towards adolescent hormonal contraceptive use was another important finding associated with the non-use of hormonal contraceptives among adolescents in this study. Most adolescents in this study approved of hormonal contraceptive use among married adults, to help them space up their children while they work. However, young girls and unmarried adults using contraception were perceived to lack good sexual morals. This negative attitude is likely shaped by prevailing descriptive social norms, that discourage pre-marital sex in most African societies including Ghana^{39,51}. Sexual intercourse in most African societies is not an activity meant for “children” and society’s disapproval of sexual intercourse among young people inherently prohibits contraceptive use amongst them.^{39,51} Agha et al highlighted a strong negative association between contraceptive use and social norms that discourage pre-marital sex and contraceptive use among adolescents³⁹. This finding supports results from other similar studies.^{51,52}

Another barrier to hormonal contraceptive use reported in this study is the lack of self-efficacy to organise hormonal contraceptive methods. This finding is

similarly reported in other studies where adolescent’s refuse to go for contraceptives from health facilities and chemical seller shops, attributable to feelings of embarrassment and shyness associated with securing contraceptive methods from the various sources.^{31,52,53} The feeling of embarrassment emanates from adolescent’s anticipated negative reaction from providers, community gossip and labelling of promiscuity, as a response to early sexual activity amongst them. Programs aimed at building decision-making skills, assertiveness and self-confidence in adolescent girls could be an effective way of shaping their self-efficacy and hence, improving their hormonal contraceptive use decision making and subsequent uptake.

An additional significant finding that explains the non-use of hormonal contraceptives is the girls’ strong perception and fear of side effects of hormonal contraceptives, similar to findings from other studies^{29,52,53}. Popular among the perceived side effects was future infertility. Some of the girls expressed the fear that the substance injected or implanted into the body could get mixed in the blood and stay in the system for long periods, which could cause miscarriages or lead to future infertility. In most African countries, childlessness is stigmatized, making childbirth a very important accomplishment. Indeed, one’s success in life and social status is highly associated with the ability to bear children and sometimes the number of children one has.²⁹ Therefore, the use of anything with the potential to interfere with one’s child bearing ability will be highly feared and avoided.

In addition to the fear of future infertility, adolescents also expressed worry about specific side effects related to using the implant. Though dysmenorrhea, amenorrhea, headache and dizziness are supported by literature as side effects of using implants,⁵⁴ the popular belief that the implant could get missing in the body and also cause epilepsy is misconstrued. These misconceptions may have been fueled by ignorance and or misinformation from friends and other community members. However, the notion of dislodging implants appears to be common among Ghanaian youth as well as adults.⁵⁵ It is imperative therefore to direct interventions to disabuse adolescents’ minds of their negative perceptions and misconstrued ideas about the side effects of hormonal contraception use. Out-reach to schools, places of worship and market centres could be very useful for sensitizing adolescents by health workers.

Furthermore, fear for disclosure of contraceptive use emanating from societal disapproval of hormonal contraceptive use amongst adolescents was reported as a key deterrent to hormonal contraceptive use reported in this study. Whether actively, or passively, adolescents in this study would be unwilling to disclose contraceptive use to their important others. They feared that if these people became aware of their hormonal contraceptive use, it would be disapproved of and consequently result in stigmatization or even aggressive responses.^{52,56} Such disclosure issues which are rarely reported in hormonal contraceptive use literature are often seen within the context of a set of social norms which sanction “immoral sexual practices”.⁵⁷ Research on treatment adherence have shown that lack of disclosure can negatively influence adherence which in turn results in all kind of health issues.^{58–60} Adolescents’ ability to disclose their hormonal contraceptive use or intentions to use especially to experienced adults such as parents and health workers may potentially expose them to the right information about the different contraceptives and their mode of action, to disabuse their minds of some of their misconceptions and take away their fears to promote use. Interventions targeting parents’ and improving parent–child communication on sexuality-related matters may be a solution.

Lastly, adolescent’s religious beliefs which prohibit the use of hormonal contraceptive prevent them from using hormonal contraceptives. Some Christians and Muslims believe that children are gifts from God and trying to stop them from coming by whichever means including the use of contraceptives is sinful as reported in other studies.^{57,61,62} In Nnalwada’s study, adolescent’s reported that contraceptive use was viewed as murder in religious circles.⁶² The phenomenon may explain why some religious leaders oppose contraceptive use. Religion is a very important component of the Ghanaian society. Christian and Islamic religions are highly practiced. Most of the religious laws and beliefs are consistent with, and reinforce societal norms, compounding adolescents’ dilemma to use hormonal contraceptives. Societal norms are very difficult to change,⁶³ however, parents, religious leaders, teachers and community opinion leaders are very important agents in promoting change. It is important to educate them on the need for adolescents to have access to contraceptive use information and services and the risks to adolescent’s wellbeing if these needs are not met.

To conclude, non-use of hormonal contraceptives among adolescents in this study was explained by

a combination of individual, interpersonal, community and institutional-based factors, shaped by social normative beliefs. Generally, the reasons for non-contraceptive use reported in other studies are similar to what we found as reasons for non-hormonal contraceptive use in this study. However, in addition to these reasons, fear of real and perceived side effects of hormonal contraceptives in general and perceived side effects of specific hormonal contraceptive methods, and disclosure issues are very strong reasons for non-use. A quantitative study to test the relative significance of the identified determinants of hormonal contraceptive use, to inform the content of interventions to promote hormonal contraceptive use, in order to reduce the occurrence of adolescent pregnancy in the Kintampo area of Ghana is desirable, so we plan to embark on one.

It is worth to mention some limitations. Our study findings represent opinions from a few adolescent girls in the study area and make the study findings not generalizable to all other Ghanaian adolescents and, for that matter, other adolescents in general. The strength of this paper is that, though the adolescents’ expressed opinions, beliefs and values were the same in both the focus group discussions and in-depth interviews, using both data collection methods was very useful. In the in-depth interviews, adolescents provided sensitive information that they may have avoided had it been in a focus group discussion. In the focus group discussions, discussants portrayed divergent ideas where necessary, made the point and gave examples to back their claim. This generated very rich diverse group data.

Data Sharing Statement

Data supporting the results reported in this manuscript is available upon request. Interested persons may contact the corresponding author.

Ethics Approval and Informed Consent

Ethical approvals were obtained from the Kintampo Health Research Centre Institutional Ethics Review Committee (FWA number 00011103) and the Ethical Review Committee, Psychology and Neuroscience at Maastricht University (Reference number ECP_04_09_2012_S23). Also, permission was sought from the management of the youth facilities and schools where participants were recruited. We explained to the prospective study participants

during recruitment that data collection would be anonymous and that participation was voluntary. We also explained that participants had the right to decline participation or withdraw their consent at any stage of the study, or decline to answer any question they did not feel comfortable about and that one was free to stop the interview without having to offer any explanation. Finally, the prospective participants were assured of strict confidentiality regarding information collected; that only aggregated data will be made available as part of scientific and public dissemination. Written informed consent was obtained from the [individual(s) and/or minor(s)' legal guardian/next of kin] for the publication of aggregated study results and any potentially identifiable images or data included in this article.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Disclosure

All authors declare no conflict of interests, be it financial or otherwise in this work.

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