



Determining Factors Influencing Family Planning Practices among Adolescents in the Tema Central Sub-Metropolis, Greater Accra Region, Ghana

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Authors' contributions

This work was carried out in collaboration among all authors. Author DAF designed the study contributed to data acquisition, analyzed and interpreted the data with author AO under the supervision of author PA. Authors AO and PA wrote the first draft of the manuscript. All authors read and approved the final manuscript for publication.

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ABSTRACT

Introduction: The public health importance of family planning is well documented, some of which include averting the number of unintended pregnancies, reducing maternal and child mortality and number of abortion episodes among women. Adolescents are mostly vulnerable to peculiar health risks in relation to reproduction and sexuality. Despite interventions aimed at improving their family planning uptake, family planning practices among adolescents remain low in Ghana.

Objective: This study was carried out to determine factors influencing the knowledge and Family Planning practices among adolescents at the Tema Central sub-metropolis of Ghana.

Methods: A descriptive cross-sectional study design was used to investigate the objective of this study. A total of 381 adolescents from adolescent service friendly units in the Tema Central sub-

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metropolis were sampled using cluster sampling technique for the study. Knowledge of adolescents on FP services was analysed descriptively using frequencies, percentages. The Chi-Square statistic was used to estimate differences in FP knowledge and demographic data of respondents. Statistical significance was considered based on p-value <0.05.

Findings: There was a high level of awareness of family planning among the adolescents (96.1%). Knowledge on family planning was good among the adolescents (98.4%). Age ($P<0.05$) and level of education ($P<0.05$) had significant influence on knowledge on family planning among the adolescents. However, out of the 381 adolescents, only twelve (3.1%) had ever used a FP method in the past and only six were using a FP method at the time of the study. Adolescent general perception of youth friendly services provided for the adolescents was positive.

Conclusion: Despite the high level of awareness and good knowledge of family planning among the adolescents, their family planning practices were poor. There is the need to repackage and advertise adolescent family planning services and make the services attractive to adolescents through collaborative effort between the Ghana Health Service, the media and all stakeholders.

Keywords: Family planning; practices; adolescents and Tema central sub metropolis.

1. INTRODUCTION

Family Planning (FP) is a service rendered to individuals and couples to allow them anticipate and attain the desired number of children and spacing and timing of their birth [1]. The public health importance of family planning is well documented some of which include averting the number of unintended pregnancies, reducing maternal and child mortality and number of abortion episodes among women [2,3,4]. Family planning is also used to promote gender equality and women empowerment [5]. Despite the enormous benefits, the proportion of women not using family planning services is high [6].

There exist vast disparities in FP use among women globally [7]. The proportion of women using family planning ranges from 18% in Ethiopia to 92% in Vietnam [7]. In general, there is less use of FP among women in rural areas. However, this is not always so in Central and West African countries. Educated women in countries like Guinea, Liberia, Mali and Niger use family planning less than the less educated. In the Eastern, Asian and African countries, including Ghana, use of FP is almost invariably low or non-existent among women with no children but increases as parity increases [6]. In addition, the use of FP among adolescent girls is low [8].

Adolescence is defined by the World Health Organization as the period of human growth and development which occurs between ages 10 and 19 years. This growth and development occur between childhood and adulthood [9].

Globally, 23% of adolescent girls are married or in union, and 3% are unmarried but sexually active [10]. About 11% of all births and 14% of maternal deaths worldwide are among 15 to 19-year-old females with 95% of adolescent births taking place in developing countries [11,12]. In 2015, 15 million adolescent girls in developing countries gave birth and 13 million adolescents lacked access to contraceptives. Only about 15% of adolescent girls who were married or in union were using contraception. Half of this number lived in Asia and the Pacific and more than 30% lived in sub-Saharan Africa [10].

In Sub-Saharan Africa (SSA), millions of youth are at risk of poor reproductive outcomes. There is high adolescent birth rate of 120 per 1000 girls aged 15 to 19 years in SSA [13]. The rate of pregnancy among adolescents aged 15 to 19 years has remained high in Ghana in spite of a slight decline from 14% in 2000 to 12.2% in 2007 [14]. They are mostly vulnerable to peculiar health risks in relation to reproduction and sexuality yet their uptake of family planning services is low [15].

Globally, the use of FP among unmarried adolescents range from 21% to 64% and from 6% to 67% among married adolescents [16]. In Asia, less than 1% unmarried sexually active adolescents use FP compared to 28% in Haiti up to 64% in Peru within Latin America and the Caribbean. However, use of FP among the married adolescents in Asia range from 6% in Azerbaijan to 47% in Bangladesh. In sub-Saharan Africa, the proportion of unmarried sexually active adolescents using FP ranges from 21% in Mali to 42% in Ghana with FP use among married ones ranging from 8% in Mali to

36% in Zimbabwe [6]. This indicates low uptake of FP services among adolescents.

Factors responsible for this low uptake of FP services among adolescents include, but not limited to, unavailability of FP services to adolescents [17], laws and policies restricting adolescent access to FP services, poor knowledge of contraceptive use [18], religious restrictions on use of contraceptives [2] and negative public perception about adolescent use of contraceptives [19]. This is aggravated by negative attitude of FP service providers [3,20]. Easy access to and availability of wide range of FP methods can have greater influence on the uptake of such services by adolescents [19,3].

Quality of care in FP remains one of the greatest determinants of patronage of FP services [21]. Quality of FP services however, is affected by three conditions: client, provider and facility characteristics; structural factors; process factors [22] where the process factors include those factors such as provider-client interactions, privacy, client waiting time and eligibility requirement [22]. Provider's years of working experience can be linked to quality of care as this creates room for provider familiarization with how clients behave [23].

Improving use of family planning services is key to improving maternal health. In addition, provision of quality of care in family planning services is critical to support higher levels of contraceptive uptake [21].

In Ghana demand for family planning is 40% among the general population while usage stands at 34% [24]. There is low use of family planning services among adolescents in Ghana [14]. Evidence from the Ghana Demographic and Health Survey revealed that proportion of adolescents (10-19 years) who received family planning services in the Tema Metropolitan area in 2016 stood at 10%. This reduced to 5.4% in 2017. In 2016 and 2017, family planning acceptor rate for adolescents in Tema central was 4.9% and 2.5% respectively. However, adolescent family planning services acceptor rate dropped from 2.5% in 2017 to 0.8% in 2018.

Afenyadu and Goparaju [25] in their study in Ghana found that among sexually active adolescents, 41% did not use a condom, 34% did not use any modern contraceptive (e.g. vaginal foaming tablet, pill, condom, IUD, injectable, Norplant) and 30% did not use any

family planning method at all during their last sexual encounter. Lack of knowledge of sex and family planning and the lack of skills to put that knowledge into practice prevent adolescents from using family planning services which places them at risk of unintended pregnancy [26]. Some sexually active adolescent girls in Ghana do not even know they could get pregnant from engaging in sexual intercourse [26].

Interventions aimed at increasing family planning uptake and usage among adolescents includes school and community-based educational programmes, mass-media campaigns, peer education and provision of youth friendly health services in clinical and outreach services [20]. However, the uptake of FP practices among adolescents still remains low. There was therefore, the need to investigate adolescent FP practices and the factors influencing uptake of FP services among adolescents in the Tema Central Sub-Metropolis.

2. METHODS

The study employed a descriptive cross-sectional design. The study was conducted in all the four adolescent corners situated in the Tema Central Sub-Metropolis. Tema Central Sub-Metropolis is located in the Tema metropolis, at the southern part of Greater Accra Region. It is one of the metropolises in Greater Accra Region and shares boundaries to the northeast with Dangme West District, south-west by Ledzokuku Krowor Municipal, north-west by Adentan Municipality and Ga-East Municipality, north by the Akuapim South District and south by the Gulf of Guinea. It covers a total land area of about 87.8 square kilometers. The administrative capital is Tema [27]. The adolescent aged 10 to 19 years make up 18.9% (55,334) of the total Tema Metropolis population. About 91% of the population 11 years and older are literate and of this population, about 48% are literate in both English and Ghanaian languages; 30.5% are literate in English only and 3.2 percent are literate in a Ghanaian language only [27].

The Tema Central Sub-Metropolis has four adolescent corners. Three are located in Senior High Schools within the sub-metropolis and the fourth one in the Tema General Hospital. These include the CHEMU Senior High School Adolescent Corner, the Tema Methodist Day Senior High School adolescent corner, the Tema Presbyterian Senior High School Adolescent Corner and the Tema General Hospital adolescent corner.

The adolescent corners in the 3 senior high schools within the Tema Central Sub-metropolis are located within the sick bays of these schools. These adolescent corners work on all working days throughout the week. Average annual attendance to all adolescent corners in the Tema Central Sub-Metropolis is 3,984 with the highest numbers coming from the Tema General Hospital. The breakdown includes 2,784 from Tema General Hospital, 432 from CHEMU Senior High School, 336 from Tema Methodist Day Senior High School and 432 from Tema Presbyterian Senior High School. Services provided include general medical assessment, counselling service and reproductive health services all specifically for adolescents. The adolescent corners in the Tema Central Sub-Metropolis were selected because of the Tema General Hospital adolescent corner which has

the largest clientele in the whole of the Tema Metropolis.

A map of Tema Metropolis is shown in Fig. 1.

The study population was made up of male and female adolescents living in the Tema Central Sub-Metropolis.

Due to the vulnerable nature of the target population and the sensitive nature of the phenomenon under study, whereby adolescents might not want their parents to know of their FP practices, only older adolescents, 16-19 years living in the Tema Central Sub-Metropolis were selected for the study. This was to secure adolescents could consent to their participation in the study.

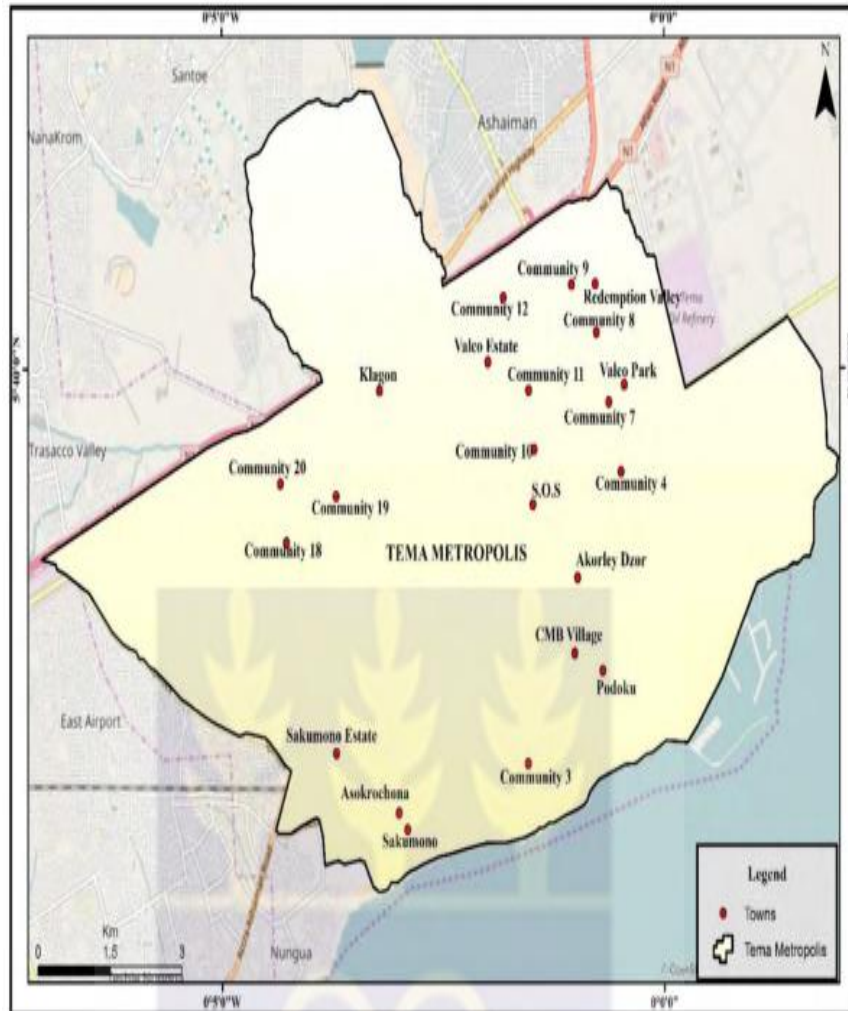


Fig. 1. Tema Metropolis [28]

Adolescents, 16-19 years who refused or were too sick to take part in the study were excluded from the study.

2.1 Variables

The outcome variable was Family planning practices of adolescents in the Tema Central sub-Metropolis.

The explanatory variables included Socio-demographic characteristics (sex, age, level of education, religion, culture, perception about youth friendly services); input factors (availability, accessibility of services, number of providers, qualification and technical, equipment and supplies and infrastructure) and process factors (guidelines and protocols, counselling skills, trained staff, attitude of staff).

2.2 Sample Size

Empirical evidence showed that, prevalence of contraceptive use among adolescents in Accra was 38% [29]. The sample size was calculated at 95% confidence level using a formula by Yamane [30].

The formula is given by:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n= required sample size

N= population size

Z^2 = standard normal deviate for two tailed-test based on 95% confidence level = 1.96

p= proportion of adolescents using family planning services = 38%=0.38

q=1-p= proportion of adolescents not using family planning services = 1-0.38 = 0.62

e= margin of error = 5% = 0.05

Therefore, the sample size was calculated as 363 participants and adjusted by a 5% non-response rate to 381.

2.3 Sampling Method

The proportionate cluster sampling technique was employed in the selection of respondents for the study. The proportionate cluster sampling technique is a type of cluster sampling technique whereby the sample size of each designated cluster is proportionate to the size of the population [31]. By so doing adolescents seeking

FP services at the adolescent health corners of the Tema Central Sub-Metropolis were divided into four clusters based on their average monthly attendance.

Proportionate stratification was then carried out by assigning a sample proportional to each of the adolescent corner's average monthly attendance. With a total average annual attendance of 3,984 adolescents at the adolescent corners, the sample proportional to the population of each of the adolescent corners was calculated

The sample sizes for the selected adolescent corners were proportionately calculated based on their population sizes as follows.

Tema General Hospital had 267;
CHEMU Senior High School 41;
Tema Methodist Day Senior High School 32 and
Tema Presbyterian Senior High School 41 participants

The adolescents were then randomly selected from their respective adolescent corners. The random sampling was done by writing "Yes" and "No" into folded pieces of papers and given to the adolescents to pick. The required number of adolescents who randomly picked "Yes" from each adolescent corner was then selected for the study. The picked papers were replaced before the next picking in order to ensure that all the respondents had equal chance of being selected.

2.4 Data Collection

A structured questionnaire was administered to the adolescents at the Tema Central Sub-Metropolis. This covered socio-demographic characteristics of the respondents, including their age, sex, religion, level of education; knowledge of adolescents of FP services and FP practices among adolescents. Adolescent perception about youth friendly services was assessed.

Structured questionnaires were used to collect data to determine FP practice of adolescents and factors associated with knowledge on FP services delivered to adolescents in Tema Central sub-metropolis. Questionnaire was administered individually to the adolescents. They were all informed about the study and given the questionnaire to fill after they consented to participate. They were allowed enough time to complete the questionnaires after which the filled questionnaires were collected the same day. Those who were unable to read and write English had their questions read out to them in "Twi", a common vernacular in Ghana. This was

to ensure that they all understood the questions well and provide appropriate responses.

2.5 Data Analysis

To ensure reliable data, the questionnaire was pre-tested on 20 adolescents from the 4 adolescents health corners at the Tema Central sub-Metropolis.

Data was entered into STATA Version 15 for analysis. The data were analysed descriptively using frequencies, percentages, averages and standard deviations for demographic and knowledge of adolescents of FP services variables. The Chi-Square statistic was used to estimate differences in FP knowledge and demographic data of respondents. Statistical significance was considered based on p-value <0.05. Means and standard deviations were used to analyse factors influencing adolescent FP practices and healthcare providers' attitude towards adolescent FP services. The results are displayed in tables and graphs.

2.6 Validity and Reliability of the Tool

The questionnaire was adapted from Ghana Health Service patient satisfaction survey tool, (GHS, 2004). These tools were considered because of the benefit of having good reliability and validity. Face validity was examined by using the dichotomous scale with categorical options of "yes" or "no".

2.7 Ethical Consideration

Ethical approval for the conduct of the study was granted by the ethical review committee of the

Ghana Health Service Ethical review Committee with reference number: GH-ERC-074/04/19. Approval was sought from Tema Metropolitan Health Directorate. Permission was also sought from all staff in charge of the selected adolescent health corners.

Informed consent was sought from all respondents. Only adolescents 16-19 years who were considered as matured enough to also consent on their own were contacted. Those who agreed were asked to sign a consent form as evidence of their willingness; Participation was entirely voluntary and no one was coerced to take part in the study.

3. RESULTS

The results of the study is divided into sections. The first section reports on the socio-demographic characteristics of participants. The remaining sections present the results on level of knowledge of adolescents of family planning (FP) practices, factors influencing knowledge of FP practices among adolescents, FP practices among adolescents and adolescent perception of youth friendly services provided.

3.1 Socio-demographic Characteristics of Respondents

Majority of the respondents were from Tema General Hospital (70%). The remaining adolescents who participated in the study were from the youth friendly units in the three senior high schools, (30%). Average age of the respondents was 17.6 years (SD=0.56) ranging from 16 to 19 years. Majority of

Table 1. Variables in the study

Variable Type	Definition	Scale of Measurement
Dependent variable		
Knowledge of family planning practices	Information that adolescents have about the types, classification and the use of FP methods	Ordinal
Independent Variables		
1. Perception of youth friendly services	Opinions adolescents have about youth friendly services	Ordinal
2. Sex	Gender affiliation of adolescents	Nominal
3. Age (years)	Chronological years of adolescents	Interval
4. Educational level	Primary, secondary or tertiary level of education	Ordinal
5. Religion	Christian, Muslim, Traditionalist or other faith-based affiliation	Nominal

them were females (90%). About 92.9% of the respondents were never married. However, 3.9% were cohabiting and 12 (3.1%) were married.

Almost all, 96.9% of the respondents had Senior High school or Technical level of education. Also 41.7% of the respondents lived with both parents and 28.3% of them lived with their mother while 9.4% of the respondents lived with other persons who were not their relatives. Table 2 shows the result of the socio-demographic characteristics of respondents.

3.2 Adolescent Knowledge and Awareness of Family Planning

Almost all 96.1% of the respondents were aware of family planning. Majority of the respondents, 94.5% described family planning as a method to prevent pregnancy and space births. About 85% of the respondents indicated pills, IUD, injectables, foaming tablet as family planning methods and 15% indicated the safe period as a family planning method. To most of the respondents, 85% the best time to use contraceptives was all the time. However, 15% of

the respondents indicated that the safe period was the best time to use contraceptives.

Furthermore, 72.4% of the respondents indicated that condoms effectively protect against HIV and sexually transmitted infections and effectively protect against pregnancy. On the other hand, 27.6% of them indicated that condoms can disappear inside a woman's body and that it can be used more than once.

Almost all, 96.1% of the respondents indicated the benefits of family planning was helping the mother to regain her strength before another pregnancy and 3.9% of the respondents indicated that family planning allows couples to decide the number of children to have and prevent unwanted pregnancies. This is shown in Table 4.

Knowledge of family planning services was ranked on two levels. Correct answers were ranked 2.0 and all wrong answers were ranked 1.0. Mean scores ranged from 1.0 to 2.0. Means

Table 3. Socio-demographic Characteristics of Respondents (n=381)

Variable		Number (n)	Percent (%)
Institution	Tema General Hospital	267	70
	Chemu Senior High School	41	11
	Tema Methodist Day Senior High School	32	8
	Tema Presbyterian Senior High School	41	11
	Total	381	100
	Gender	Male	36
Female		345	90.6
Total		381	100
Religion	Christian	351	92.1
	Muslim	30	7.9
	Total	381	100
Marital status	Never married	354	92.9
	Married	12	3.1
	Cohabiting	15	3.9
	Total	381	100
Level of education	Primary	3	.8
	JHS/ Middle School	9	2.4
	SHS/Technical	369	96.9
	Total	381	100
Who one lives With	Mother	108	28.3
	Father	27	7.1
	Both mother and father	159	41.7
	Siblings	24	6.3
	Relatives	27	7.1
	Other	36	9.4
	Total	381	100

scores at 1.0, 1.1 to 1.5, 1.6 to 1.9 and 2.0 represented poor, average, good and very good knowledge, respectively.

More than half, 420 (55.1%) of the respondents had good knowledge and 330 (43.3%) had very good knowledge of family planning. Twelve (1.6%) however, had average knowledge of family planning.

The main sources of information on family planning among the respondents were from their teachers, 126 (33.1%) and the hospital, 123 (32.3%). This was followed by friends, 45 (11.8%), radio/ television, 45 (11.8%) and parents, 27 (7.1%). The results are in Table 5.

3.3 Factors influencing Knowledge of Family Planning

A linear logistic regression analysis was performed between level of knowledge of family planning (dependent variable) and age, religion, marital status, level of education of respondents at $P < 0.05$ level of significance. Age ($P < 0.05$) and level of education ($P < 0.05$) significantly predicted knowledge of family planning.

This implies that older adolescents and adolescents with higher levels of education were significantly more knowledgeable of family planning compared with the younger and less

educated adolescents. However, religion and marital status of adolescents did not significantly contribute to knowledge of family planning. Table 6 shows the results.

3.4 Practice of Family Planning among Adolescents

As shown in Table 7, majority of the respondents, 92.1% had never visited the clinic for family planning services in the past 12 months while 1.6% of them had been there once in the past 12 months. But 6.3% of them had visited the clinic for family planning services more than once in the past 12 months.

Secondly, only 3.1% of the respondents had ever used a family planning method to prevent pregnancy. Majority of the respondents, 96.9% had never used a family planning method to prevent pregnancy. Among the 12 respondents who had ever used a family planning method to prevent pregnancy, 75% of them decided on their own to use the family planning method whilst 25% of them were encouraged by their partners to use a family planning method. Among those who had ever used a family planning method in the past, 50% used the pills and the other 50% observed the safe period.

Table 4. Adolescents Knowledge and awareness of family planning

Knowledge		Number (n=381)	Percent (%)
Awareness of family planning	Not aware	15	3.9
	Aware	366	96.1
What one knows family planning is	Abstinence from sex	21	5.5
	Methods to prevent pregnancy and space births	360	94.5
Family planning methods that are known	Safe period	57	15.0
	Pills, IUD, Injectable, Foaming tablet	324	85.0
Best time to use contraceptives	In the safe period	57	15.0
	All the time	324	85.0
What one knows about condoms	Can disappear inside a woman's body & Can be used more than once	105	27.6
	Effectively protect against HIV and sexually transmitted infections & Effectively protect against pregnancy	276	72.4

Known benefits of family planning	Allows couples to decide the number of children to have & Prevent unwanted pregnancies	15	3.9
	Helps mother to regain her strength before another pregnancy	366	96.1

Table 5. Knowledge level and source of information on family planning

Knowledge		Number (n=381)	Percent (%)
Knowledge level of family planning	Average	12	1.6
	Good	420	55.1
	Very good	330	43.3
Source of information on family planning	Friends	45	11.8
	Teacher	126	33.1
	Hospital (Nurse/ Doctor)	123	32.3
	Radio/Television	45	11.8
	Internet	3	.8
	Parent (Mother/Father)	27	7.1
	Sibling (Brother/Sister)	3	.8
	Other	9	2.4

Table 6. Relationship between knowledge level and demographic variables

Model	Unstandardized coefficients		Standardized coefficients	T	Sig P_Value.	95.0% Confidence interval for B	
	B	Std. error	Beta			Lower bound	Upper bound
(Constant)	1.996	.723		2.759	.006	.574	3.418
Age	-.005	.029	-.009	-.162	.871	-.061	.052
Religion of respondents	-.092	.099	-.047	-.927	.355	-.286	.103
Marital Status of respondents	-.042	.046	-.048	-.902	.368	-.133	.049
Level of education of respondents	.417	.118	.184	3.525	.000	.184	.649

Table 7. Family planning practices of adolescents

Practice		Number (n)	Percent (%)
How often one has visited the clinic for family planning services in the past 12 months	None	351	92.1
	Once	6	1.6
	Twice	12	3.1
	Thrice	6	1.6
	Four-Five times	6	1.6
Have you ever used a family planning method to prevent pregnancy?	Ever used	12	3.1
	Never used	369	96.9
If "Yes", whose decision was it for you to use a family planning method?	My self	9	75.0
	Partner	3	25.0
Family planning method used in the past	Pills	6	50
	Safe period	6	50

Practice		Number (n)	Percent (%)
Family planning method one is currently using	Pills	6	1.6
	None	375	98.4
Where one obtained the family planning method	Partner	3	50
	Health facility	3	50
Do you discuss the use of family planning methods with your partner?	discuss	12	3.1
	Don't discuss	3	.8
	Missing	366	96.1

At the time of the study, only 1.6% of the respondents were using the pills as a family planning method whilst 98.4% of the respondents were not using any family planning method. Among the 6 respondents who were using the pills at the time of the study, 3 obtained it from their partners and the other 3 obtained it from the health facility. Only 3.1% of the respondents discussed family planning with their partners. The results are shown in Table 7.

3.5 Adolescents Perception of Youth Friendly Services

When asked about their perception of youth friendly services, majority, 78.8% of the respondents perceived that adolescents did not get their choice of service during a visit to the adolescent youth friendly clinic. Secondly, majority, 83.5% of the respondents perceived that the health workers at the adolescent clinic

make adolescents feel comfortable enough to ask questions. Thirdly, most, 83.5% of the respondents perceived that the health workers at the adolescent clinic involved adolescents in deciding the youth friendly services that would best suit their needs. Table 8 displays the results.

Furthermore, 84.3% and 85.8% of the respondents perceived that the staffs at the adolescent clinic would spend time to listen to adolescents and examine them, respectively. In addition, 82.7% and 321 (84.3%) of them perceived that health workers treat adolescents in a respectful and friendly manner and assured adolescents that, their information would be treated as confidential, respectively. However, 309 (81.1%) of them perceived that the service providers condemned adolescents' decisions or actions. This is shown in Table 8.

Table 8. Perception of youth friendly health services

Attitude	Friendly n (%)	Not Friendly n (%)
Do adolescents get their choice of service during visit to the adolescent clinic?	81 (21.3%)	300 (78.7%)
Did the health workers at the adolescent clinic make adolescents feel comfortable enough to ask questions?	318 (83.5%)	63 (16.5%)
Do you perceive that adolescents are involved in the decisions regarding their care when they visited the facility?	318 (83.5%)	63 (16.5%)
Do the service providers spend enough time to listen to adolescents' concerns?	321 (84.3%)	60 (15.7%)
Do the service providers spend enough time to examine adolescents?	327 (85.8%)	54 (14.2%)
Do the service providers treat adolescents in a respectful and friendly manner?	315 (82.7%)	66 (17.3%)
Do the service providers assure adolescents that, their information will be treated as confidential?	321 (84.3%)	60 (15.7%)
Do the service providers condemn adolescents' decisions or actions?	309 (81.1%)	72 (18.9%)

4. Discussions

The discussion responds to the study's objectives (adolescent knowledge of FP, factors influencing adolescent knowledge of FP, FP practices among adolescents and adolescents' perception of youth friendly services).

Majority of the adolescents were aware of family. Pills, IUD, injectables, foaming tablet were the common family planning methods known among the adolescents. Use of condoms was known to protect against HIV and other sexually transmitted infections, and pregnancy effectively. The main factors influencing knowledge of FP among adolescents were age and level of education.

Only 3.1% of the adolescents had ever used a FP method to prevent pregnancy. About 50% of the respondents used the pills and the other 50% observed the safe period. Only 1.6% was using the pills as a family planning method at the time of the study. The adolescents mainly perceived that adolescents did not get their choice of service during a visit to the adolescent friendly corners. However, majority perceived that the health workers at the adolescent clinic make adolescents feel comfortable enough to ask questions; involve adolescents in deciding the youth friendly services that would best suit their needs, spend time to listen to adolescents and examine them.

The average age of the adolescents in this study was 17.6 years (SD=0.56) ranging from 16 to 19 years. This showed that the adolescents were older adolescents [9]. In a similar study on adolescents FP knowledge and practices in Kintampo, Ghana, Boamah et al. [32] assessed adolescents aged 15–19 years with a mean age of 16.9 years. Usually, older adolescents are known to engage in more sexual activities than younger adolescents with high birth rate among adolescent girls from 15-19 years of age [33]. This usually made them more vulnerable to peculiar health risk in relation to reproduction and sexuality. However, their uptake of family planning services was low [6,15]. As such, this group has the highest need for adolescent health care services compared with younger adolescents.

Majority 90.6% of them were females which also suggested that female adolescents form the largest proportion of clients that access adolescent health care services. This also

implies that female adolescents were more health conscious than their male counterparts. They might be accessing adolescent health care services at the adolescent health corners rather than services from the family planning unit of the adolescent friendly health corner since the use of FP among adolescent girls was known to be low [8]. However, literature shows that male adolescents indulge in riskier sexual behaviours than the females [10] but this reported none of the males using a FP method.

4.1 Adolescents Level of Knowledge and Awareness of Family Planning

One of the objectives of the study was to assess the knowledge that the adolescents had of family planning. Findings from the study show a very high level of awareness (96.1%) of FP among the adolescents. This finding is in line with a study done in India on adolescents' knowledge on FP. The results indicated that almost all the adolescents in the study had heard about FP and were knowledgeable of FP [34]. This elaboration of high level of awareness of FP methods among adolescents also confirms the findings of Masood and Alsonini [35] from their cross-sectional study where 95% of adolescents in Yemen were found to be aware about FP and sexual health.

Family planning comprises deliberate efforts by couples to control or space birth through the use of contraceptives [27]. In this study, majority (94.5%) of the adolescents knew that FP involved methods to prevent pregnancy and space births. This confirms the finding of Renjhen et al. [34] who assessed knowledge of family planning among adolescents in India. They found that the adolescents knew that the purpose of contraceptives was to aid in the prevention of unwanted pregnancies and to allow for proper birth spacing. Similarly, Dangat and Njau [36] also found that adolescents in Tanzania had adequate knowledge of FP services. Moyo and Rusinga [37] in their study on "Contraceptives: Adolescents' Knowledge, Attitudes and Practices. A Case Study of Rural Mhondoro-Ngezi District, Zimbabwe" also found universal knowledge and awareness on FP methods among adolescents in Zimbabwe. This shows that the non-use of FP among the adolescents in this study may be due to other factors other than lack of awareness about the existence of birth control methods.

Commonly known FP methods among the adolescents were the condom, pills, IUD,

injectables and foaming tablet (85%). A study in India which was done to assess adolescent knowledge on FP also found that condoms and contraceptive pills were the common contraceptives known to adolescents [34]. Similarly, Katama and Hibstu [38] found that injectables, the oral contraceptive pill and condom were the commonly identified contraceptives among adolescents. The male condom, pills and injectables were also commonly indicated by adolescents in Kintampo, Ghana [32]. Thus, an indication of high awareness of modern contraceptives among adolescents.

However, just a few (15%) of them indicated safe period as family planning method. Observing the safe period as a FP method actually involves no cost however, it requires discipline and knowledge about the female's menstrual cycle. Thus, an indication that adolescents generally do not understand how to observe the safe period as a FP method or perhaps may not be aware of the safe period as a FP method. This explains why the safe period was not mentioned by adolescents in previous studies [32,34,38].

Majority (85%) of the adolescents knew that it is best to use contraceptives at all the time. This usually guarantees a pregnancy free sex life within or outside the safe period. There however, exists some knowledge gap among 15% of the adolescents who indicated the safe period as the best time to use contraceptives. Use of contraceptives during the safe period only provides a double guarantee that there will be no pregnancy. This does not imply that contraceptives cannot be used to protect against pregnancy outside the safe period [32,39].

Among the FP methods commonly known by adolescents, condoms were indicated by 72.4% of the adolescents as a method to effectively protect against HIV and sexually transmitted infections and effectively prevent pregnancy. This confirms the finding of Kayiki and Forste [40] in Uganda where adolescents were found to be highly aware about the importance of condoms in protecting one from contracting HIV/AIDS during sexual intercourse. Thus, an indication that the majority of the adolescents had good understanding of how condoms actually work. However, in practice, Muchiri, Odimegwu and Wet [41] found that the perceived risk of getting infected with HIV among sexually active adolescents in South Africa did not influence their use of condoms.

The notion that a quarter (27.6%) of the adolescents held that condoms could be used more than once and could disappear inside a woman's body was an indication that some misconceptions still exist among sections of adolescents of condoms in general and how they were used appropriately. These are myths and misconceptions adolescents have about FP methods. However, Gueye, Speizer, Corroon and Okigbo [42] found that in Africa myths that are held by the youth were that "people who use contraceptives end up with health problems," "contraceptives are dangerous to women's health" and "contraceptives can harm your womb." Adolescents in Chile were also found to have misconceptions of FP [43]. This implies that more health education needs to be done to address these misconceptions and make all adolescents knowledgeable of FP methods.

Family planning was known by majority (96.1%) of the adolescents to help mothers to regain her strength before another pregnancy. Usually, the spacing of births that occurs with the practice of FP allows the mother enough time to regain her strength physically and psychologically before getting pregnant [1]. This is consistent with a study by Katama and Hibstu [38] in South Ethiopia where it was found that adolescents knew of the importance of contraception and also indicated that FP prevented unwanted pregnancies and could help with birth spacing.

In this current study, the knowledge scores on FP were 55.1% for adolescents reporting good knowledge and 43.3% reporting very good knowledge of FP. This suggests an overall good knowledge of FP among the adolescents. Studies confirm that adolescents have good knowledge on FP with good knowledge levels ranging from 76.4% among adolescents in northern Tanzania [36] to 94.7% among adolescents in South Ethiopia [38]. The high level of knowledge of FP among adolescents in this study might be due to the fact that majority (96.9%) of them were pursuing Senior High School or Technical level of education who as part of their curriculum received some form of sexual and reproductive health education. This could be linked to studies conducted in Ghana by Nyarko [44] which reported that adolescents with higher level of education had good knowledge on FP methods. Similarly, studies in Tanzania [36] and Yemen [35] also suggested high levels of knowledge of FP among adolescents with higher level of education.

The common sources of information on FP among the adolescents were their teachers (33.1%) and the hospital (32.3%). This suggests the important roles that teachers and health workers play in disseminating information on FP to adolescents. This contradicts the finding from a study in Yemen which showed that television, relatives, radios and newspapers were the common sources of information on FP among adolescents in Yemen [35]. In northern Tanzania, Dangat and Njau [36] also found that the main sources of information on FP among adolescents in their study were the radio and newspaper.

4.2 Factors Influencing Knowledge of FP

Findings on factors influencing knowledge of FP among adolescents showed significant differences between age ($P < 0.05$) and level of education ($P < 0.05$) and, knowledge of FP. Usually, as adolescents age, they meet more people and learn more. This is likely to make them get to know more about contraceptives compared with the younger ones. Secondly, this also means that as adolescents climb higher in the academic ladder, the more they get to know about FP. In a similar study in Ghana, Boamah et al. [32] compared knowledge level and age of adolescents in Kintampo and found that older adolescents, 18-19 years of age had higher knowledge on FP compared with younger adolescents, 15 – 17 years of age. Thus, an indication that the older the adolescent, the more knowledge he or she has of FP.

Boamah et al. [32] also found that adolescents with Senior High School level education or higher had higher knowledge of at least one method of contraception compared with adolescents with Primary/ Junior High School level education or no formal education. Dangat and Njau [36] also reported that adolescents who were in the higher class had significantly higher knowledge of FP compared with adolescents in the lower class. This could also be linked to the findings of Masood and Alsonini [35] where the youth with undergraduate level education in Yemen had significantly high level of knowledge of FP than the youth who were in the secondary schools. This underscores the need to encourage education among adolescents. However, Nyarko [44] found in Ghana, that the highest percentage of contraceptive use was among adolescents with senior high school education or higher and the least use was among adolescents with no formal education.

4.3 Practice of FP among Adolescents

Only 3.1% of the adolescents in this study had ever used a FP method to prevent pregnancy. This suggested poor use of FP methods among the adolescents. This confirms existing reports that the use of contraceptives in Africa is low [45]. Yet, literature shows that adolescents are increasingly becoming sexually active at a younger age and engaging in sexual activities [29,46], which underscores the need for them to patronize FP services to protect their sexual and reproductive health. The poor practices of FP among the adolescents despite its availability and ease of access at these FP units at the adolescent corners have implications for policy, planning and implementation of the adolescent or youth friendly corners in Ghana.

Only 25% of the adolescents using FP in this study were encouraged by their partners to do so. This percentage was less than the finding of Kareem and Samba [29] in Korle-Gonno, within Accra, where 30% of sexually active female adolescents was encouraged to use contraceptives by their guardians, partners and healthcare providers. Raj and Chandra-Mouli [47] on the other hand reported less decision-making power and very rigid societal norms as factors affecting uptake of FP methods among female adolescents in Indonesia. However, Gbagbo and Nkrumah [48] found that the most vulnerable adolescents in Ghana found it difficult to access contraceptives due to perceived social stigma.

Common FP methods used among the adolescents in this study who had engaged in FP previously were the pills and observing the safe period. However, Kareem and Samba [29] and Boamah et al. [32] found that condoms were commonly used by adolescents in Ghana.

Only 1.6% of the adolescents in this study reported using the pills as a FP method at the time of the study. This rate was lower compared with the findings of Renjhen et al. [34] in India where 7% of adolescents used contraceptives at the time of the study [34]. Similarly, McCurdy et al. [46] found that majority (92.4%) of adolescents in Sub-Saharan African nations do not use contraceptives.

Furthermore, the adolescents using the pills in this study usually obtained it from their partners and from the health facility, which contradicted the findings of Boamah et al. [32] where chemical shops and the pharmacies were known to be

major sources from which adolescent's access FP methods from. However, Alege, Matovu, Ssensalire and Nabiwemba [49] reported that government and private health facilities were the main sources of FP services among young women in Uganda. In some other areas the laws and policies governing the use of contraceptive among adolescents are restrictive which also limits their choices of access to FP services [50].

In this study, only 3.1% of the adolescents discussed FP with their partners which may be due to lack of confidence or shyness to discuss FP with their partners. In their quest to assess adolescent decision to use contraceptives in Ghana, Boamah et al. [32] found that only 42% of the sexually active adolescents did not discuss FP use with their partners whilst 32% of them decided on their own to use contraceptives which were inconsistent with findings from the current study. Low decision-making power among female adolescents may discourage them from discussing family planning with their partners [47]. Feeling of shyness is also mentioned as one of the reasons why adolescent girls may not discuss FP services with their partners [51].

4.4 Adolescent Perception about Youth Friendly Services

Findings from the study on the perception of adolescents of youth friendly services provided at the adolescent corners showed that majority (78.8%) of them perceived that adolescents usually did not get their choice of service during visits to the adolescent corner. Therefore, the inability of adolescents to get their choice of health service from the adolescent clinic raises a lot of concerns.

Instead of the inability to find the FP method of choice at the adolescent corner among adolescents in this study, Fikru et al. [52] rather found shortage in equipment and resources needed to provide FP services for adolescents in Southwest Ethiopia. Secondly, availability and access to FP methods among adolescents were also found as a barrier to adolescent FP uptake by Rojas, Eguiguren, Matamala, Palma and Gálvez [53] among adolescents in Chile. All these might explain the low patronage of services at the adolescent corners. It also poses a threat to the sustainability of the adolescent corner concept.

On the other hand, majority (83.5%) of the adolescents perceived that adolescents were

made to feel comfortable enough to ask questions at the adolescent corner and were involved in decisions concerning youth friendly services that will best suit their needs. The study done by Atuahene et al. [3] in the Akwapim North District of Ghana reported that the health care workers at the adolescent corners relate well with the adolescents and created a conducive environment for interaction between the staff and the adolescents. This could also be linked to the finding of Nalwadda, Namutebi and Volgsten [54] in Uganda, where adolescent FP providers interacted well and put in their best to provide the needed FP services for adolescents.

This shows that the adolescents are encouraged to interact well with the staff at the adolescent corner. Such interactions are usually expected to help health workers identify adolescent health care needs and provide care suitable for these adolescents. The inability of adolescents to access health care services of their choice at the adolescent health corners questions the kind of interaction that goes on between the staff and the adolescents. On the contrary, adolescent girls in Mexico felt uncomfortable discussing FP practices with their health workers [55]. Rojas Ramírez et al. [53] also had a similar finding in Huechuraba, Chile that adolescents were perceived to feel uncomfortable discussing FP issues with health workers due to problems with trust and confidentiality.

Furthermore, the adolescents in this study perceived that the staff at the adolescent clinic spent time to listen to adolescents (84.3%) and examined them (85.8%). Similarly, in Uganda, Nalwadda et al. [54] found that adolescent FP service providers were willing to teach adolescents about FP and provided them with FP services. Thus, an indication of satisfaction with communication and interaction between the staff and the adolescents at the adolescent corner.

This finding however, was not consistent with findings of Fantahun [56] in Northwest Ethiopia that the adolescents were rather dissatisfied with how their FP service providers communicated with them.

The adolescents were also of the view that health workers treated adolescents in a respectful and friendly manner (82.7%) and assured adolescents that, their information would be treated as confidential (84.3%). Treatment of clients with respect and ensuring confidentiality with interactions carried out with clients,

especially adolescents, are likely to lead to the development of mutual respect and trust between the adolescents and the health staff at the various adolescent corners. This corresponds with a study in Pakistan by Khan et al [57] where positive attitude towards work was reported among health workers attending to adolescent sexual and reproductive health needs. This also confirms another study in the Akwapim North District of Ghana where health care providers were found to greet and introduce themselves to adolescents in order to build good rapport with them thus, creating a friendly environment within which they could interact well with adolescents [3]. This however, contradicts the findings in a study in Kenya where FP providers were found to be rude and disrespectful to their clients [58].

Surprisingly, 81.1% of the adolescents perceived that the service providers condemn adolescents' decisions or actions. Such a condemnation is likely to generate mixed feelings that may discourage adolescents from patronising the adolescent corner. Such condemnation may be due to stigmatizing beliefs and attitudes of healthcare workers against adolescent sexual activity [59]. This could be linked with the finding from a study in Nigeria where health workers believed that the provision of contraceptives for adolescents could promote adolescent sexual promiscuity [60]. On the contrary, Kareem and Samba [29] found that no parent, guardian or service provider in Korle-Gonno, Ghana discouraged their female adolescents from using contraceptives.

5. CONCLUSION

Most of the adolescents in the Tema Central Metropolis have good knowledge and are aware of FP as well as their practices. Though the adolescents are able to describe some of the various FP methods, however, their general practice was very poor. The general perception of youth friendly services provided for the adolescents is positive.

Adolescents reported that they did not get their preferred choice of service at the adolescent corner.

General patronage of FP services at the FP unit of the adolescent corners of the Tema Central Sub-Metropolis was poor.

There is the need for the Ghana Health Service, Ghana Education Service, non-governmental organisations and all stakeholders to re-strategize to involve the youth in planning of

services that will be provided at the adolescent corners. This underscores the need for the Ghana Health Service, Ghana Education Service, non-governmental organisations (NGOs), Parent-Teacher Association (PTA) and all stakeholders in collaboration with the media to further support adolescent FP services at the youth friendly units. This may help create more awareness and make the FP services attractive to these adolescents and consequently increase patronage of FP services provided at the adolescent corners by the adolescents.

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

Ethical approval for the conduct of the study was granted by the ethical review committee of the Ghana Health Service Ethical review Committee with reference number: GH-ERC-074/04/19.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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