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Adolescents Uptake of Family Planning Services during the COVID-19 Pandemic

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Authors' contributions

This work was carried out in collaboration among all authors. Authors SA and AY did the conception of the study and designed the study. Author SA and DC did the data collection. Authors SA and AY did the data analysis and interpretation of the manuscript. Authors SA, DC, and AY prepared the draft and interpretation of the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

The outbreak of the COVID-19 pandemic ravaged the world and left significant effects on lives, health, economy and society. Existing records point to how previous pandemics significantly impacted adolescent sexual and reproductive health. This study examined the effects of COVID-19 on the utilization of family planning services among adolescents in Tamale Metropolis. An analytical

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cross-sectional design with a quantitative research approach was employed. A total of 286 participants were randomly sampled for the study. From the results, 62.8% were aware of family planning services that targeted adolescents, however, 37.0% did not know where adolescent-friendly family planning services were provided. Patronage of family planning services was slow as evidenced by the 31.8% prevalence of family planning method usage and 27.8% regular users of family planning services before the COVID-19 pandemic, and got worse during the pandemic. Most of the adolescents in this study were unable to access family planning services during the COVID-19 period. It also emerged that 19% of the participants were denied family planning services during the pandemic. Adolescents had a high unmet need for family planning before the COVID-19 pandemic. This situation was worsened due to the effects of the pandemic. The use of technology including the use of social media, mobile apps, helplines, WhatsApp groups, and hotlines was recommended to solve the issue of inaccessibility and unavailability of family planning services and community distribution of contraceptives to check the unavailability of contraceptives during pandemics.

Keywords: COVID-19; adolescent; uptake; family planning services.

1. INTRODUCTION

Historically, outbreaks of pandemics are known for their disruption of social, economic, educational, and health systems [1]. This often leads to disruption in development as there is an established relationship between health and development, as “better health is central to human happiness and well-being” [2]. Some experts have argued that family planning has an impact in reducing poverty, gender equality, improving education, health, and environmental conservation. Chandra-Mouli et al. [3] have indicated that family planning prevents adolescent pregnancy and improves health outcomes for women of childbearing age. Research has also shown that, compared with pregnancy in adult women, adolescent pregnancy is associated with undesirable outcomes, including increased neonatal mortality; higher incidence of low birth weight, prematurity, and developmental disabilities [4]. Many adolescents, however, do not have access to the information and services they need to promote their sexual and reproductive health. Studies have however shown how disease outbreaks such as Ebola have impacted negatively on the uptake of family planning services, making worse the already precarious situation. Broadening the development framework of family planning services will benefit consumers of family planning services [5].

Programs related to family planning in developing countries need to be strengthened to make the program more resilient to boost their development output which comes with the increasing figures of individuals in the labour force [5]. Increasing rates of fertility and the significant FP unmet needs of most Sub-Saharan African states, including Ghana is a pointer to the need to expand access and uptake of contraception. Research shows that youth aged 15–24 years are at high risk of poor sexual and reproductive health outcomes [6]. Additionally, Sub-Saharan Africa has the world's highest rates of adolescent pregnancies (10–19 years), with approximately 35% of pregnancies among 15 to 19-year-olds being unintended, underscoring an unmet need for family planning among young women [7,8,2].

The outbreak of COVID-19 was not only a burden to the individuals, but also the disruption of many social, economic, and health-related activities, qualifying as a health disaster worldwide [9]. It went further to indicate that COVID-19 is more than a health disaster given the unprecedented socio-economic burden. Emphasizing that every state the pandemic hits can create an overwhelming societal, financial, and political effect leaving profound and long-lasting blemish [9,10,11,12,13].

Globally, the pandemic affected all manner of individuals, including adolescents, making it more likely to be affected because of their unmet needs for healthcare services including family planning services [14]. The public health interventions and response strategies governments across the globe put into place had adverse implications for sexual and reproductive health, especially those of adolescents and young adults [15]. The intervention put in place has intensified the already existing challenges adolescents face in terms of access to services and information [14]. This study sought to examine the impact of COVID-19 on adolescent use of family planning in the Tamale Metropolis.

2. MATERIALS AND METHODS

2.1 Study Area

Tamale Municipal Assembly was upgraded to a Metropolitan status in 2004 following a legislative act (L1 2068). Currently, the Metropolis is one of the country's six metropolitan assemblies. It is also the only Metropolis in the three Northern regions. Tamale is the regional capital of the Northern Region and also serves as the metropolitan capital. The Tamale Metropolis is located in the northern region's core region, bordering the Sagnarigu District to the west and north, Mion District to the east, East Gonja District to the south, and central Gonja to the southwest. The metropolis' land area is projected to be 646.90180 square kilometers [16].

2.2 Study Design

The study employed a cross-sectional design using a quantitative study approach. The study design was selected because it is a means for collecting data from a sample drawn from a specific population at a single point in time [17]. A quantitative research approach collects data in numerical form and analyzes it using mathematical methods, particularly statistics, to understand a problem or phenomenon [18].

2.3 Study Population

The population of this study was adolescents (14-19 years) in the Tamale metropolis from which the study sample was selected. The study population included adolescents in in schoolIn-school adolescents are all those adolescents who are in school in the Tamale metropolis and are between the ages of 14-19 years. All those excluded were young people below 14 years and above 19 years.

2.4 Sample Size Estimation

The Cochran formula was used for the sample size of the study, $n = \frac{Z^2 Pq}{d^2}$; (Cochran, 1989).

The prevalence of FP in the Northern region of Ghana is 23.5% (GHS, 2018) hence 24% (0.24) was used to calculate the sample size.
The formula for the sample size:

$$n = \frac{Z^2 Pq}{d^2};$$

n= sample size,
z = z-score of a 95% confidence level (5% significance level) of the study equivalent to 1.96,
p = prevalence of family planning in Northern region is 23.5 % (GHS) will be used. Hence p = 24% (0.24) in this study,
q = estimated proportion of adolescents (1-p= 0.76), and
d = margin of error of the study thus 100%-95%= 5% = 0.05 in this study.

$$n = \frac{(1.96)2x0.24x0.76}{0.05^2}$$

$n_0 = 0.700/0.0025$
$n_0 = 280.17$
Thus, the sample size was 280
With a 10% non-response rate, the sample size for this study was 308 adolescents.

2.5 Sampling Technique

Simple random selection was utilized to choose four Senior High Schools in the Tamale Metropolis. After the schools were selected, a systematic sampling techniques was was used to select participants aged 14-19 years with the aid of their class registers.

2.6 Data Collection Techniques and Tools

The data collection was done within the Tamale Metropolis from February to July 2021. The data collection technique was a survey. The data collection tool used was an interview-administered questionnaire. There were closed-ended and open-ended questionnaires and codes provided to represent the options selected by the participants. The independent variables are age, sex, educational status, occupation, knowledge of family planning, and risk perceptions of contraceptives. The dependent variables were family planning utilization and COVID-19.

2.7 Quality Control

For the sake of reliability and accuracy of the study, various measures were taken. Field assistants fluent in Dagbani (local dialect), not more than 25 years old, were recruited and trained by the researcher to ensure they understood their task. Additionally, they were tasked to and also, clarification of the aim of the study, data collection techniques and procedures, as well as an introduction to the data collection tools. A pre-test was done with a small

number of respondents from the Sagnarigu District, 30 participants were used, 20 in-school, and 10 out-of-school participants. The pre-test was done to ascertain unclear statements or ambiguities and to determine the validity and reliability of the data collection tools.

2.8 Data Analysis

Categorical variables were coded to allow for quantitative analysis using the Statistical Package for Social Sciences (SPSS). Data was cleaned to ensure data accuracy and validity. Descriptive analysis was conducted using frequencies, percentages, and mean with standard deviation, and association was done using chi-square analysis. Statistical significance was set at 95% (0.05) and results were presented using tables and figures.

3. RESULTS

3.1 Demographic Characteristics

A total of 286 questionnaires were successfully answered for analysis. The mean age of the respondents was 17.38± 1.37 years, with a modal age of 19 years. Concerning sex, 71.7% were females and 28.3% were male. The majority (70.6%) were Muslims, and 64.3% reside in rural communities. Those who have ever been pregnant were 22.4%. Of this number, 57.8% were with a history of one pregnancy, 15.6% with two, and 26.6% with a history of 3 or more (Table 1).

3.2 Adolescent Family Planning Service Usage

The data revealed that 62.8% of the participants were aware of adolescents-targeted family planning services being provided. Regarding where these services are provided, 42.9% indicated that the services were provided in hospitals, 15.4% mentioned schools, and 4.8% mentioned pharmacies. The prevalence of history of family planning usage was 31.8%. See (Table 2).

3.3 Family Planning Method used by participants

Condom use was the dominant (17.8%), followed by 9.8% of oral contraceptive pills, and then 8.0% of emergency contraceptive pills, and the least, IUD with 0.7%. with regard to difficulty in the usage, 30.8% attributed it to religious factors, 27.3% financial, 14.3% attributed the challenges to family value, and finally, distance as a factor was 9.4%. See (Table 3).

Table 1. Demographic characteristics of the respondents

		Frequency (286)	Percentage
Age group	14 -17 years	135	48.7%
	18 - 19 years	142	51.3%
Sex of Respondent	Male	81	28.3%
	Female	205	71.7%
Educational Level	JHS	68	23.8%
	SHS	174	60.8%
	Tertiary	13	4.5%
	No education	31	10.8%
Religion of Respondent	Christianity	84	29.4%
	Islam	202	70.6%
	African traditional religion	0	0.0%
Residence	Rural	62	21.7%
	Peri-urban	40	14.0%
	Urban	184	64.3%
Number of pregnancies	1	37	57.8%
	2	10	15.6%
	3 or more	17	26.6%

Table 2. Adolescent Family Planning Service Usage

		Frequency (286)	Percentage
Are you aware of adolescents-targeted family planning services provided?	Yes	179	62.8%
	No	106	37.2%
Where are these adolescent-friendly FP services provided?	School	42	15.4%
	Hospital	117	42.9%
	Pharmacy	13	4.8%
	Don't	101	37.0%
Have you ever used any family planning method?	Yes	91	31.8%
	No	195	68.2%
Who introduced you to FP?	Teacher	27	31.8%
	Parents	7	8.2%
	Friends	41	48.2%
	The church	1	1.2%
	Others	9	10.6%

Table 3. Family planning method used by respondents

		Frequency (286)	Percentage
Oral contraceptive pill	Yes	28	9.8%
	No	258	90.2%
Injectable	Yes	15	5.2%
	No	271	94.8%
Implant	Yes	6	2.1%
	No	280	97.9%
Condoms	Yes	51	17.8%
	No	235	82.2%
Emergency contraceptive pill	Yes	23	8.0%
	No	263	92.0%
IUD	Yes	2	0.7%
	No	284	99.3%
Difficulties you face in access and use of FP methods of your choice			
Distance	Yes	27	9.4%
	No	259	90.6%
Finances	Yes	78	27.3%
	No	208	72.7%
Religious values	Yes	88	30.8%
	No	198	69.2%
Family values	Yes	41	14.3%
	No	245	85.7%

3.4 Frequency of FP usage before COVID-19

Among the participants, 28.7% indicated usage of FP before Covid-19. Of this, 7.0% used it weekly, 14.0% used it monthly, 6.3% used it quarterly and 1.4% used it when necessary (Fig. 1).

3.5 Association between FP use and Demographic Characteristics

There was a statistically significant relationship between the use of FP and the demographic characteristics of participants. Participants age was significantly associated with the usage of FP method X^2 (1, 286) = 10.314, P= 0.001. The educational level of participants was also significantly associated with the usage of FP method X^2 (3, 286) = 23.403, P < 0.001. Additionally, the religious affiliation of the participants was significantly associated with the usage of the FP method X^2 (1, 286) = 4.434, P= 0.043. Finally, the history of several pregnancies was significantly associated with the usage of the FP method X^2 (2, 286) = 10.478, P= 0.005. Meanwhile, variables such as the sex of the participants and residence were not significantly associated with the usage of the FP method (Table 4).

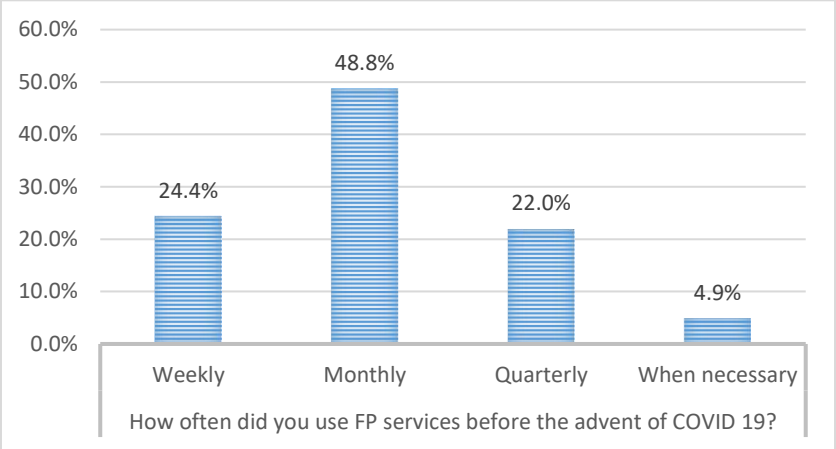

Fig. 1. Frequency of FP usage before COVID-19

Table 4. Chi-square association between family planning service use and demographics of respondents

		Have you ever used any family planning method?		X^2	df	P-value
		Yes	No			
Age group	14 -17 years	30	105	10.314	1	0.001
	18 - 19 years	57	85			
Sex of Respondent	Male	24	57	0.249	1	0.617
	Female	67	138			
Educational Level	JHS	31	37	23.403	3	<0.001
	SHS	43	131			
	Tertiary	10	3			
	No education	7	24			
Religion	Christianity	34	50	4.109	1	0.043
	Islam	57	145			
Residence	Rural	18	44	0.434	2	0.805
	Peri-urban	12	28			
	Urban	61	123			
Number of pregnancies	1	28	9	10.478	2	0.005
	2	6	4			
	3 or more	5	12			

Table 5. Family planning service during the COVID-19 pandemic

		Frequency (286)	Percentage
Were you able to access family planning services during the COVID 19 period?	Yes	48	18.5%
	No	212	81.5%
What were some limitations to FP access during COVID 19 pandemic?			
Unavailability of contraceptives	Yes	9	7.6%
	No	109	92.4%
Limited staff available	Yes	10	8.4%
	No	109	91.6%
Lockdown	Yes	158	59.2%
	No	109	40.8%
Inaccessibility of facilities	Yes	7	6.0%
	No	109	94.0%
Access to family planning services			
Have you ever been denied a particular FP product during COVID-19 pandemic?	Yes	48	19.0%
	No	205	81.0%

Table 6. Inability to access family planning services effects

		Frequency (286)	Percentage
Has the inability to access family planning services affected your daily life?	Yes	79	29.6%
	No	188	70.4%
In what way has not been able to access a service affected your life?	Unprotected sexual intercourse	28	19.6%
	The constant fear of being pregnant	36	25.2%
	Unplanned Pregnancy	27	18.9%
	Abortion	13	9.1%
	Failed relationship because of fear of unprotected sex	39	27.3%
Has there been any interventions to help you access and use FP services during the COVID 19?	Yes	71	27.6%
	No	186	72.4%
If yes, by whom?	NGO	33	35.9%
	The school	32	34.8%
	The church/mosque	12	13.0%
	Parents	8	8.7%
	Others	7	7.6%
In what ways were the interventions given?	Cash	12	10.3%
	Education and counselling	78	66.7%
	Contraceptives	27	23.1%

Source: Field survey, 2021

3.6 How COVID-19 affected adolescents' Access and Use of FP

From the study, 81.5% of the participants indicated they could not access family planning services during the Covid-19 period. Challenges mentioned include; lockdown (59.2%), limited available staff (8.4%), unavailability of contraceptives (7.6%), and inaccessibility of facilities (6.0%) (Table 5).

3.7 Effects of Inability to Access FP Services

The inability to access family planning services affected the daily lives of 29.6%. It caused unprotected sexual intercourse according to 19.6% of participants. Failed relationship due to fear of unprotected sex (27.3%). Also, problems of unplanned pregnancies (18.9%), and abortion (9.1%). According to 27.6% of the participants, there were interventions to help them access and use FP services during COVID-19. The intervention includes help from Non-Governmental Organizations (35.9%), Schools (34.8%), the Church or Mosques (13.0%), Parents (8.7%), and Others such as friends (7.6%). Most (66.7%) of the interventions were in the form of education and counselling, the provision of contraceptives (23.1%), and cash (10.3%) (Table 6).

4. DISCUSSION

Family planning services are considered a basic human right; a means to achieve optimum sexual and reproductive health [19]. There is a growing need for FP services among adolescents worldwide, however, many have these needs unmet. Some attribute this challenge to a lack of awareness of the availability of FP services for adolescents as was found in this study (37.0%) not knowing where adolescent-friendly FP services were provided. This ties in well with what was espoused in a study by Bhatt et al. [20] in Nepal, where some participants were not fully aware of the available FP services.

It has been revealed that the prevalence of family planning method usage in this area was 31.8% before the COVID-19 pandemic. In a similar study in West Africa, a prevalence rate of 13.0%, and in Uganda, a prevalence of 9.4% contraceptive usage was reported [21,22]. In a similar study in Ghana, Oppong et al. [23] found a prevalence of 34.0%. These low prevalence

rates speak to the high unmet need of adolescents for FP services, adding credence to Chandra-Mouli et al. [3], claim that 23 million adolescents have an unmet need for modern contraception. Addressing this challenge requires significant promotion of adolescent-friendly FP services especially on the patronage of modern contraceptives. This study also showed that condoms were the dominant modern family planning method adopted by the participants. Szucs et al. [24] in their study in USA, and Boamah et al. [25] in Ghana, report that condoms were the most patronized modern contraceptives by adolescents. Condoms remain a popular choice among adolescents due to their easy availability, effectiveness, and the lack of need for a prescription [26]. Many condom distribution interventions were implemented based on adolescents' propensity to use condoms [27]. Before the outbreak of the COVID-19 pandemic, 28.7% of the adolescents indicated using FP services. The majority of these participants used these services every month and only 1.4% used them when necessary. The low usage of FP services before COVID-19 echoes the low awareness and high unmet FP needs.

Religion was identified as the most significant barrier to accessing family planning services. In this study, religious affiliation was found to be substantially linked to the use of the FP strategy. This corroborates Yusuf, [28] study in Africa where religious inclination was identified to be a major barrier to the use of FP services. Sundararajan et al. [29] have indicated how religion plays a role in marriage, by promoting child-bearing and high fertility, however, most adolescents are unmarried and their main focus is sexual intercourse. Religion shuns sexual intercourse outside of marriage and hence does not promote FP outside marriage. The use of FP services is perceived to promote sexual promiscuity, thus an infringement on family values [30]. According to the Ghana Demographic Health Survey [31], there has been a progressive shift from abstinence to sex practice among adolescents, with a 61% increase in the proportion of adolescent girls 15-19 experiencing their first sexual engagement [31]. Another significant challenge to the access to FP services includes financial problems. Chandra-Mouli et al. [3] noted that some adolescents simply are unable to afford contraceptives. Financial costs of FP services were also reported by other studies as a challenge [32,33]. Adolescents may face a financial hurdle due to the cost of contraceptive services and methods. For an adolescent, contraception may be expensive, and the necessity for parental financial support may jeopardize anonymity [26].

The uptake of FP services by adolescents remains slow as evidenced by the 31.8% prevalence of FP method usage and 27.8% regular users of FP services before COVID-19. During the Ebola epidemic in Guinea, Liberia, and Sierra Leone, there was a comparable drop in the use of FP services [34,35]. Most of the adolescents in this study were unable to access FP services during the COVID-19 period with limitations including the lockdown (59.2%), unavailability of contraceptives, and inaccessibility of health facilities. In projections using mathematical models, the COVID-19 pandemic was predicted to cause a 25% to 50% decline in access to FP services [36] and a 10% decline in the usage of short- and long-acting reversible contraceptives [37]. Adolescents have a high unmet demand for FP services in normal times due to inaccessibility, unavailability, and unaffordability of reproductive health services. This unmet need is amplified during humanitarian emergencies especially in wars and pandemics [37]. This heightened risk and limited access and utilization of FP and reproductive services have been reported from previous experiences with past pandemics [37]. This gives credence to the need for adolescent sexual health services during emergencies.

Long-term limitations on sexual and reproductive health services would result in an increase in unmet family planning needs, contraceptive failure or non-use, unexpected pregnancy and subsequent unsafe abortion, and increasing prevalence of sexually transmitted infections (STIs) [38,39]. The inability to obtain family planning services had an impact on 29.6% of the respondents' everyday lives. According to 19.6% of respondents, it resulted in unprotected sexual intercourse. This causes 25.2% of responders to have a persistent worry of becoming pregnant. Also, this created problems of unplanned pregnancy (18.9%) and abortion (9.1%). This finding was confirmed in research in Ghana's Eastern Region, which found an increase in adolescent pregnancy instances attributable to the effects of EBV [40]. Similarly, during the Ebola outbreak in Sierra Leone, a high percentage of young girls experienced their first pregnancy [19]. Unmet family planning needs, contraceptive failure or non-use, unplanned

pregnancy, and consequent unsafe abortion, and a higher prevalence of sexually transmitted infections (STIs) are all consequences of long-term limits on sexual and reproductive health services [38,39].

5. CONCLUSION

Adolescents in Ghana had a high unmet need for family planning before the COVID-19 pandemic. This situation was worsened due to the effects of the pandemic. Many of the adolescents in this study were aware of family planning services that targeted adolescents. However, most were denied access to these services due to the unavailability and inaccessibility of family planning during the pandemic. The use of technology including the use of social media, mobile apps, helplines, WhatsApp groups, and hotlines was recommended to solve the issue of inaccessibility and unavailability of FP services and community distribution of contraceptives to check the unavailability of contraceptives during pandemics.

6. LIMITATIONS

While this study shows how COVID-19 has affected adolescents' use of family planning in Senior High Schools within the Tamale Metropolis, the findings may not be generalizable to other dissimilar geographical locations. This quantitative study examined the effects of COVID-19 on adolescent uptake of Family Planning Services. Participants shared their experience about family planning during the pandemic, but could not provide information on family planning use post-COVID-19.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during the writing or editing of manuscripts.

ETHICAL APPROVAL AND CONSENT

The research protocol was submitted to the Kwame Nkrumah University Science and Technology Institutional and Ethical Review Committee. Approval was granted after the review with ref. number CHRPE/AP/167/21. Informed consent was obtained in writing and was in line with the Institutional and Ethical Review Committee. All consent forms were prepared in compliance with the requirements of the Institutional and Ethical Review Committee. Consent forms for participants were prepared. Each participant was asked if s/he would like to keep a copy of the study information portion of the written consent form or a copy of the entire form.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Fuseini K, Jarvis L, Hindin MJ, Issah K, Ankomah A. Impact of COVID-19 on the Use of emergency contraceptives in Ghana: An interrupted time series analysis. Front Reprod Health. 2022;4:811429.
   DOI: 10.3389/frph.2022.811429. PMID: 36303651; PMCID: PMC9580762.
2. WHO, Coronavirus disease 2019 (COVID-19) Situation Report – 94, 23 April 2020, World Health Organisation; 2020b.
3. Chandra-Mouli V, Parameshwar PS, Parry M, Lane C, Hainsworth G, Wong S, Menard Freeman L, Scott B, Sullivan E, Kemplay M, Say L. A never-before opportunity to strengthen investment and action on adolescent contraception, and what we must do to make full use of it, Reproductive Health. 2017;14:85.
   DOI 10.1186/s12978-017-0347-9.
4. WHO. Adolescent pregnancy; 2018.
   Available:https://www.who.int/news-room/fact sheets/detail/adolescent-pregnancy.
5. Petruney T, Wilson LC, Stanback J, Cates WJr. Family planning and the post 2015 development agenda. Bull World Health Organ. 2014 Aug 1;92(8): 548-548A.
   DOI: 10.2471/BLT.14.142893. PMID: 25177066; PMCID: PMC4147409.
6. WHO. Evidence Brief: The importance of sexual and reproductive health and rights to prevent HIV in adolescent girls and young women in East and Southern Africa. Geneva, Switzerland: WHO; 2017.
7. Loaiza E, Liang M. Adolescent pregnancy: A review of the evidence. New York: UNFPA Population and Development Branch. Technical Division; 2013.

8. Chae S, Desai S, Crowell M, Sedgh G, Singh S. Characteristics of women obtaining induced abortions in selected low- and middle-income countries. PLoS One. 2017;12(3):e0172976.
DOI:10.1371/journal.pone.0172976
Available:https://doi.org/10.1371/journal.pone.0172976
9. UNFPA, Reproductive, maternal, newborn and adolescent health during pandemics lessons learned for practical guidance, united nations population fund west and central africa regional office; 2020.
10. Dapar MP, Joseph BN, Damun AP, Okunlola RC, Ibrahim HA, Mohammed SG, Chingle MP, Wannang NN. Provision of sexual and reproductive health services in community pharmacies: A cross-sectional assessment of structures and processes in Jos, Nigeria, Journal of Pharmaceutical Research International. 2019;30(3):1–9.
DOI: 10.9734/jpri/2019/v30i330272.
11. Oliveira, Jefferson Carlos de, Henrique Almeida Assis Costa, Plínio Regino Magalhães, Joana Beatriz de Lima Silva, Marcia Maria Hernandes de Abreu de Oliveira Salgueiro, Abraão Vergasta Reis, Roseane Pereira Jesus Lima, Normelia Santos Oliveira, Lucilia Rocha Lopes Augusto, Maria Luzinete Rodrigues da Silva. Sexuality and reproductive health in adolescence: An integrative review. Journal of Advances in Medicine and Medical Research. 2024;36(3):128-34.
Available:https://doi.org/10.9734/jammr/2024/v36i35391.
12. Kavanaugh ML, Jerman J, Ethier K, Moskosky S. Meeting the contraceptive needs of teens and young adults: Youth-friendly and long-acting reversible contraceptive services in US family planning facilities. Journal of Adolescent Health. 2013 Mar 1;52(3):284-92.
13. Liang M, Simelane S, Fillo GF, Chalasani S, Weny K, Canelos PS, Jenkins L, Moller AB, Chandra-Mouli V, Say L, Michielsen K. The state of adolescent sexual and reproductive health. Journal of Adolescent Health. 2019 Dec 1;65(6):S3-15.
14. Biddlecom A, Riley T, Sully E, Ahmed Z. Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health In low- and middle-income countries. International Perspectives on Sexual and Reproductive Health. 2020;46:73–76.
15. Addae EA. COVID-19 pandemic and adolescent health and well-being in sub-Saharan Africa: Who cares? The International Journal of Health Planning and Management. 2021; 36(1):219-222,
DOI: 10.1002/hpm.3059
16. GSS, GHS, ICF International. Ghana demographic and health survey 2014. Rockville, Maryland, USA: GSS, GHS, and ICF International; 2015.
17. GSS. 2010 Population & Housing Census, National Analytical Report; 2013.
18. Apuke OD. Arabian Journal of Business and Management Review (Kuwait Chapter). October; 2017.
Available:https://doi.org/10.12816/0040336
19. UNFPA. Recovering from the Ebola Virus Disease: Rapid Assessment of Pregnant Adolescent Girls In Sierra Leone, UNFPA Sierra Leone; 2017.
20. Bhatt K, Agolli A, Patel MH, Garimella R, Devi M, Garcia E, Amin H, Domingue C, Guerra DCR, Sanchez-Gonzalez M. High mortality co-infections of COVID-19 patients: Mucormycosis and other fungal infections. Discoveries (Craiova). 2021 Mar 31;9(1):e126.
DOI: 10.15190/d.2021.5. PMID: 34036149; PMCID: PMC8137279.
21. Compernolle L. The road ahead for young people and contraception in West Africa Youth Access in West Africa, Champions of Global Reproductive Rights, pai.org; 2015.
22. Sserwanja Q, Musaba MW, Mukunya D. Prevalence and factors associated with modern contraceptives utilization among female adolescents in Uganda. BMC Women's Health. 2021;21:61.
Available:https://doi.org/10.1186/s12905-021-01206-7
23. Oppong FB, Divine DL, Senyo YA, Anthony AA, Seidu A, Arhin-Wiredu K, Afari-Asiedu S, Ae-Ngibise KA. Determinants of contraceptive use among sexually active unmarried adolescent girls and young women aged 15–24 years in Ghana: A nationally representative crosssectional study. BMJ Open 2021;11:e043890.
DOI: 10.1136/ bmjopen-2020-043890
24. Szucs LE, Andrzejewski JD, Robin L, Telljohann S, Barnes SP, Hunt P. The health education teacher instructional

competency framework: A conceptual guide for quality instruction in school health. Journal of School Health. 2021; 91(10):774 787.
Available:https://doi.org/10.1111/josh.13076

25. Boamah EA, Asante KP, Mahama E, Manu G, Ayipah E, Adeniji E, Owusu-Agyei S. Use of contraceptives among adolescents in Kintampo, Ghana: A cross-sectional study; 2014.
DOI: 10.2147/OAJC.S56485

26. Todd N, Black A. Contraception for adolescents. J Clin Res Pediatr Endocrinol. 2020;6;12(Suppl 1):28-40.
DOI: 10.4274/jcrpe.galenos.2019.2019.S0003.
PMID: 32041390; PMCID: PMC7053440

27. Jensen J, Facing the facts adolescent girls and contraception. United Nations Population Fund; 2016.

28. Yusuf JB. Contraception and sexual and reproductive awareness among ghanaian muslim youth: Issues, challenges, and prospects for positive development. SAGE Open. 2014;4(3).
Available:https://doi.org/10.1177/2158244014541771

29. Sundararajan R, Yoder LM, Kihunrwa A, Aristide C, Kalluvya SE, Downs DJ, Mwakisole AH, Downs JA. How gender and religion impact uptake of family planning: results from a qualitative study in Northwestern Tanzania. BMC Womens Health. 2019;19(1):99.
DOI: 10.1186/s12905-019-0802-6.
PMID: 31331306; PMCID: PMC6647140

30. Silumbwe A, Nkole T, Munakampe MN, Milford C, Cordero JP, Kriel Y, Zulu JM, Steyn PS. Community and health systems barriers and enablers to family planning and contraceptive services provision and use in Kabwe District, Zambia. BMC Health Serv Res. 2018;18(1):390.
DOI: 10.1186/s12913-018-3136-4. PMID: 29855292; PMCID: PMC5984360

31. UNFPA. The state of world population 2003. Making 1 Billion Count: Investing in Adolescents' Health and Rights. Geneva, United Nations Population Fund (UNFPA); 2003.

32. Kavanaugh ML, Jerman J, Ethier K, Moskosky S, Meeting the contraceptive needs of teens and young adults: Youth-friendly and long-acting reversible contraceptive services in U.S. family planning facilities. J Adolesc Health. 2013;52(3):284–292.
DOI:10.1016/j.jadohealth.2012.10.276. [PubMed: 23298980]

33. Rubin SE, Davis K, McKee MD, New York City physicians' views of providing long-acting reversible contraception to adolescents. Ann Fam Med. 2013; 11(2):130–136.
DOI: 10.1370/afm.1450. [PubMed: 23508599]

34. Camara M, Ouattara E, Duvignaud A, Migliani R, Camara O, Leno M, Solano P, Bucheton B, Camara M, Malvy D. Impact of the ebola outbreak on trypanosoma brucei gambiense infection medical activities in coastal Guinea, 2014-2015: A retrospective analysis from the Guinean national Human African Trypanosomiasis control program. PLoS Negl Trop Dis. 2017;11(11):e0006060.
DOI: 10.1371/journal.pntd.0006060.
PMID: 29131822;
PMCID: PMC5703571

35. Bietsch K, Williamson J, Reeves M, Family planning during and after the West African Ebola Crisis, Studies in Family Planning. 2020;51(1).

36. Sharma V, De Beni D, Sachs Robertson A, Maurizio F. Why the promotion of family planning makes more sense now than Ever before?. Journal of Health Management. 2020;097206342093554.
Available:https://doi.org/10.1177/0972063420935545

37. Riley T, Sully E, Ahmed Z, Biddlecom A. Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in Low- and Middle-Income Countries, International Perspectives on Sexual And Reproductive Health. Guttmacher Institute; 2020.

38. Hall KS, Samari G, Garbers S, Casey SE, Diallo DD, Orcutt M, Moresky RT, Martinez ME, McGovern T. Centring sexual and reproductive health and justice in the global COVID-19 response. Lancet. 2020;395(10231):1175-1177.
DOI: 10.1016/S0140-6736(20)30801-1. PMID: 32278371;
PMCID: PMC7146687

39. Ghosh A, Arora B, Gupta R, Anoop S, Misra A. Effects of nationwide lockdown

during COVID-19 epidemic on lifestyle and other medical issues of patients with type 2 diabetes in north India. Diabetes Metab Syndr. 2020;14(5):917-920.
DOI: 10.1016/j.dsx.2020.05.044. Epub 2020 Jun 2. PMID: 32574982; PMCID: PMC7265851

40. Williams S, Opdam J. The unrealised potential for transformative reparations for sexual and gender-based violence in Sierra Leone. Int J Hum Rights. 2017; 21(9):1281–1301.

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