

Variations in utilization of health facilities for information and services on sexual and reproductive health among adolescents in South-East, Nigeria

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Abstract

[EXSCINDED] Abstract Background Adolescents' sexual and reproductive health have an important influence on a country's long-term national growth. There is high level of burden due to poor adolescent sexual and reproductive health (ASRH) in Nigeria, especially Ebonyi state. Evidence shows that in Sub-Saharan Africa region, most adolescents experience poor access to information and other services relating to their sexual and reproductive health. Many cultures in Africa see matters around sex and sexuality as social taboos. This study aimed to access variations in utilization of health facilities for sexual and reproductive health information and services among adolescents in Ebonyi State, Nigeria. This will inform the design of interventions to improve ASRH. Methods A total of 1057 in-school and out-of-school adolescents aged 13 to 18 years were selected using cluster sampling of households from the 6 selected LGAs in this cross sectional survey. Structured questionnaires were used to collect data. Descriptive statistics was performed alongside stratification analysis. Tabulation, bivariate and multivariate logistic regression analysis were undertaken. A household wealth index was calculated using the total household consumption calculated divided by the number of people in the households (per capital household consumption). The per capita household consumption was used to categorize households into socio-economic quintiles. The variable was used to differentiate where key variables into socio-economic quintile equity analysis. Results Majority of respondents had never visited any type of health facility to receive either SRH information (90.2%) or services (97.1%). Utilization rate of health facilities for SRH information was 9.8% while for other SRH services was 2.8%. Patent medicine vendor (PMV) was the most visited type of facility for SRH information and other services. Schooling is a strong predictor of health facilities' utilization for SRH information ($P < 0.01$) and other services ($P < 0.01$). Conclusion Utilization of health facilities for information and services among adolescents in Ebonyi State is very low and favourable towards informal service providers such as PMVs. Establishment and strengthening of the existing youth friendly centres, school clinics and occasional outreach programs designed specifically to target adolescents would perhaps improve adolescents' access to adequate information and health facility utilization for sexual reproductive and health services.

Introduction

Adolescents' sexual and reproductive health have an important influence on a country's long-term national growth^{1, 2}. This age bracket has special needs as the period is characterized by rapid growth/advancement and they also tend to have an increased interest on the opposite sex³. Adolescents' sexual curiosity and quest for information and experiences lays foundation in forming new relationships, indulging in an unprotected premarital sexual activity and continuous experiment of other unhealthy behaviors that are detrimental to their health³.

The onset of adolescence brings new vulnerabilities to human right abuses, especially in the areas of sexuality, marriage and child bearing⁴. For this, adolescents require access to

accurate, comprehensive sexual and reproductive health information and other services but barriers exist, as most of them are not able to access these services and care^{5, 6}. The need to accessing and utilizing the available health services and information is crucial in promoting sexual and reproductive health of adolescents. Poor access to and utilization of available health facility for quality services and adequate information have been identified as contributors of largely preventable SRH problems (like unwanted teenage pregnancies, unsafe abortions) and mortality among adolescents¹. Roughly every 1 in 5 young women becomes pregnant before the age of 18 years and this unwanted pregnancy among adolescents impacts negatively on their social, economic and psychological well-being⁷.

Evidence shows that in Sub-Saharan Africa region, most adolescents experience poor access to information and other services relating to their sexual and reproductive health¹. The provision of comprehensive sexual and reproductive health interventions in developing countries has been impeded by ideologically driven restrictions⁸. Available evidence shows that some African countries are ambivalent to reproductive health service provision for adolescents⁹. This in effect, makes the health system in many developing countries unfriendly for adolescents to access SRH information and services¹⁰. Many cultures in Africa see matters around sex and sexuality as social taboos, for that reason it should not be discussed and this regularly denies unmarried adolescents of their sexual and reproductive health rights^{11, 12}. Adolescents should be empowered to know and exercise their rights, including the right to delay marriage and the right to refuse unwanted sexual advances, which can be achieved by offering comprehensive sexuality education; services to prevent, diagnose and treat STIs; and counselling on family planning.

In developing countries like Nigeria, most adolescents suffer SRH preventable problems like unwanted teenage pregnancies, unsafe abortions and STIs which might lead to death of the individual¹³. Twenty-two percent of Nigeria's population are between the ages of 10-19 years with a national fertility rate of 122 births per 1,000 young women aged 15-19 years and this fertility rate is higher in north western states of the country¹⁴. These rises concern on the importance of addressing issues around sexual and reproductive health of adolescents in

Nigeria. One of the key issues in addressing matters around sexual and reproductive health of adolescents in Nigeria is that utilization of health services remains low among this age group^{10, 14}. Many studies identified limited access to SRH services, poverty, societal stigma, discrimination and restrictions around sexuality as partly what limit adolescents from utilizing the available health facilities for adequate SRH information and quality services^{9, 14}.

Variations in utilization of health facilities for sexual and reproductive health information and services among adolescents are well documented¹⁵. Previous studies suggest that demographic variations by schooling (in-school or out-of-school) exist among adolescents in their utilization of health facilities for sexual and reproductive health information and services¹⁶. This study aimed to assess variations in utilization of health facilities for sexual and reproductive health information and services among adolescents in Ebonyi State, Nigeria.

Methods

This study was conducted in urban and rural areas in Ebonyi State, South-East Nigeria. Based on the 2006 census, with a projected annual growth, Ebonyi State is estimated in 2017 to have about 6.3million inhabitants with over 40% of the state's population under the age of 15 years^{17, 18}. Ebonyi state's population growth rate is about 2.7 percent yearly and it is estimated that state's population will be doubled by the year 2050 if the population growth continues at the same rate¹⁸. The state has 13 Local Government Areas (LGAs) and three senatorial zones. Health services are provided through public and private health facilities in Ebonyi. The formal health facilities in the State include 1 tertiary hospital, 13 secondary hospitals, 431 primary health centers and private hospitals including missionary hospitals that are engaged in public private partnership. Residents of Ebonyi State participate in various walks of life as civil servants, farmers, traders and artisans. Ebonyi State has the lowest ASRH service utilization prevalence rate including contraceptives services as compared to other south eastern states in Nigeria.

Ebonyi State was purposefully selected from the 5 states in south-east Nigeria due to its poor indices. Six local government areas (LGAs) were purposively selected for this study from the

13 existing LGAs in Ebonyi State to represent the geographic locations (urban and rural) and the 3 senatorial zones. The LGAs include: Abakaliki, Izzi, Ezza south, Ikwo, Afikpo south, and Ohaozara. An additional criteria for selection included LGAs which were prioritized by the State government for adolescent SRH intervention and also those with the highest unmet contraceptive need proven by high rate of unwanted teenage pregnancies and unsafe abortions.

Households were selected through a random walk from the nearest public facility either a school, church, town hall or primary health centre (PHC) in the main entrance of the community into the villages. The study population consisted of unmarried adolescents aged 13 to 18 years, including both in and out of school adolescents. Those that refused consent to participate were excluded from the study.

A pretested **structured** interviewer-administered questionnaire was used to collect data from a sample of 1045 adolescents aged 13 to 18 years that were selected using cluster sampling of households in the six selected LGAs. Data was collected on levels of utilization of health facilities for sexual and reproductive health information and services. The questionnaire was adapted from WHO illustrative questionnaire for interview-surveys with young people¹⁹. The questionnaire was adapted to our local circumstances and priorities by rephrasing some questions, re-ordering some sections, adding more options to questions, adding new section of questions, and deleting some questions altogether. The adapted instrument was pre-tested **among** 24 adolescents that were selected purposively to ensure an equal representation of gender (male and female), place of residence (urban and rural), and schooling (in- school and out-of- school) **in a non-participating LGA**. Data was collected in pairs by 54 trained research assistants over a period of 10 days. Each pair collected data from eligible respondents both manually and electronically using paper-based questionnaire and electronic questionnaire respectively. Electronic copies of the questionnaires were uploaded to android tablets using Survey CTO. Individual matching of information on completed paper-questionnaire with corresponding electronic-questionnaire was done before and after uploading data to the server and data was viewed concurrently.

Tabulation, bivariate and multivariate logistic regression analysis were undertaken. A household wealth index was calculated using the total household consumption calculated divided by the number of people in the households (per capital household consumption). The per capita household consumption was used to categorize households into socio-economic quintiles. The variable was used to differentiate where key variables into socio-economic quintile equity analysis.

Ethical considerations: Ethical consideration was sought and obtained from the Health Research Ethics Committee of the University of Nigeria Teaching Hospital and Ethics Committee of Ebonyi State Ministry of Health. Written informed consent was obtained from parents/guardians of all eligible adolescents aged 13 to 17 years whereas adolescents aged 18 years and mature minors aged 15 to 17 years gave consent for themselves. Participation was voluntary and confidentiality was assured.

Results

Table 1 presents the results on demographic and socioeconomic characteristics of surveyed adolescents in Ebonyi state. From 1045 usable questionnaires, 50.7% adolescents reside in urban areas of Ebonyi state whereas 49.3% reside in rural areas. Surveyed adolescents comprised 57.2% females and 42.8% males. At the time of the survey most adolescents 92.4% were currently in school, only 7.6% were out of school adolescents. With respect to employment status, out of 502 who reported that they had ever worked for pay, 52.5% were currently employed while 47.5% were not employed.

Table 1: Demographic and Socioeconomic characteristics of respondents surveyed in Ebonyi state

| Variables | N | Frequency | Weighted percent |
|---------------------------|------|-----------|------------------|
| Place of residence | | | |
| 1. Urban | 1045 | 551 | 50.7 |
| 1. Rural | 1045 | 494 | 49.3 |
| Gender | | | |
| 1. Female | 1045 | 598 | 57.2 |
| 1. Male | 1045 | 447 | 42.8 |
| Schooling | | | |
| 1. In-school | 1045 | 966 | 92.4 |
| 1. Out-of-school | 1045 | 79 | 7.6 |
| Employment | | | |
| 1. Employed | 502 | 262 | 52.5 |
| 1. Unemployed | 502 | 240 | 47.5 |
| Wealth index | | | |
| 1. Q1 (poorest) | 1045 | 224 | 21.9 |
| 1. Q2 | 1045 | 211 | 20.6 |
| 1. Q3 | 1045 | 214 | 20.1 |
| 1. Q4 | 1045 | 198 | 18.8 |
| 1. Q5 (richest) | 1045 | 197 | 18.6 |

Table 2 summarizes results of adolescents' utilization of health facility for SRH information and other services in Ebonyi state. It was revealed that among 1045 surveyed adolescents, only 9.8% had ever visited a health facility for SRH information whereas 90.2% never visited a health facility for SRH information. Amongst those who had ever visited health facility, majority 33.5% visited Patent Medicine Vendor (PMV) shops. Also, among 1045 surveyed adolescents, only 2.8% of them reported that they have ever visited a

health facility for other SRH

services.

Table 2: Utilization of Health Facility for SRH information and other SRH services among respondents in Ebonyi State

| Variables (N=1045) | N | Frequency | Weighted percent |
|---|-------------|------------------|-------------------------|
| Visit to health facility for SRH information | 1045 | | |
| 1. Ever visited health facility for SRH information | | 105 | 9.8 |
| 1. Never visited health facility for SRH information | | 940 | 90.2 |
| *Type of facility visited for SRH information | 105 | | |
| 1. Patent medicine vendor shop | | 36 | 33.5 |
| 1. Primary health centre | | 29 | 29.1 |
| 1. General hospital | | 15 | 13.6 |
| 1. Teaching hospital/Mission/Private hospitals | | 8 | 7.6 |
| 1. Youth friendly centre | | 5 | 4.3 |
| 1. Others (school clinic, outreach tent) | | 12 | 11.7 |
| Visit to health facility for other SRH services | 1045 | | |
| 1. Ever visited health facility for other SRH services | | 29 | 2.8 |
| 1. Never visited health facility for other SRH services | | 1015 | 97.1 |
| 1. Refused to say | | 1 | 0.1 |
| *Type of facility visited for SRH services | 29 | | |

| | | |
|--------------------------------------|----|------|
| 1. Chemist or patent medicine vendor | 16 | 55.6 |
| 1. Primary health centre | 6 | 20.7 |
| 1. General hospital | 3 | 10.2 |
| 1. Mission/ Private Hospital | 3 | 10.5 |
| 1. Youth friendly centre | 1 | 3.0 |

*Multiple response allowed

The results of demographic and SES correlates of health facility visit for SRH information and other services is shown in table 3. There are statistically significant associations between schooling and adolescents' utilization of health facilities for SRH information ($p= 0.001$) and other services ($p= 0.002$), with out-of-school adolescents having higher utilization rates than in-school adolescents. The difference in utilization of health facilities for SRH information among adolescents in different wealth quintiles was not statistically significant ($p= 0.28$). The difference in their utilization of other SRH services did not vary significantly ($p= 0.63$).

Table 3: Demographic and SES correlates of health facility visit for SRH information and other SRH services

| Variables | N | Ever visited a health facility for SRH information | Ever visited a health facility for SRH services |
|---------------------------|-----|--|---|
| | | n (%) | n (%) |
| Place of residence | | | |
| 1. Urban | 494 | 51 (10.3) | 18 (3.6) |
| 1. Rural | 551 | 54 (9.3) | 11 (1.9) |
| χ^2 (p-value) | | 0.34 (0.56) | 1.90 (0.15) |
| Gender | | | |
| 1. Female | 598 | 57 (9.2) | 18 (3.0) |
| 1. Male | 447 | 48 (10.6) | 11 (2.4) |
| χ^2 (p-value) | | 0.57 (0.45) | 0.83 (0.43) |
| Schooling | | | |
| 1. In-school | 966 | 89 (8.9) | 22 (2.3) |
| 1. Out-of-school | 79 | 16 (20.4) | 7 (9.1) |
| χ^2 (p-value) | | 10.83 (0.001)* | 6.23 (0.002)* |
| Employment | | | |
| 1. Employed | 262 | 33 (12.5) | 14 (5.4) |
| 1. Unemployed | 240 | 30 (12.3) | 8 (3.3) |
| χ^2 (p-value) | | 0.05 (0.94) | 1.13 (0.32) |
| Wealth index | | | |
| 1. Q1 | 224 | 22 (9.6) | 6 (2.7) |

| | | | |
|--------------------|-----|-------------|-------------|
| (poorest) | | | |
| 1. Q2 | 211 | 20 (9.3) | 5 (2.4) |
| 1. Q3 | 214 | 29 (13.3) | 9 (4.3) |
| 1. Q4 | 198 | 14 (6.9) | 5 (2.4) |
| 1. Q5 (richest) | 197 | 20 (9.7) | 4 (2.1) |
| χ^2 (p-value) | | 1.26 (0.28) | 0.76 (0.63) |

*P<0.05

Table 4 presents logistic regression analysis of demographic correlates of utilization of health facilities for SRH information among adolescents. The odds of utilizing health facilities for SRH information was 3.29 times less among in-school adolescents compared to out-of-school adolescents. This shows that out-of-school adolescents are 3.29 times more likely to utilize health facilities for SRH information (AOR = 3.29, C.I = 0.14, 0.64).

Table 4: Logistic regression analysis of demographic correlates of utilization of health facilities for SRH information

| Variables | Ever visited a health facility for SRH information | | | | |
|---------------------------|--|-------|-------|--------------------|-----------|
| | Odds ratio | SE | t | P-value P > (t) | C.I |
| Place of residence | 0.706 | 0.21 | -1.17 | 0.241 | 0.39-1.27 |
| Gender | 1.178 | 0.346 | 0.56 | 0.577 | 0.67-2.10 |
| Schooling | 0.304 | 0.115 | -3.16 | 0.002* | 0.14-0.64 |
| Employment | 1.022 | 0.286 | 0.08 | 0.938 | 0.59-1.77 |
| Wealth index | 1.031 | 0.097 | 0.32 | 0.745 | 0.86-1.24 |

95% conf. interval, *p<0.01

Table 5 shows the logistic regression analysis of demographic correlates of utilization of health facilities for other SRH services. Schooling was found to statistically significantly explain utilization of health facilities for other SRH services. Out-of school adolescents were 4.41 times more likely to utilize health facilities for other SRH services (AOR = 4.41, C.I 0.08, 0.61). However, other demographics were not found to statistically correlate with utilization of health facilities for other SRH services.

Table 5: Logistic regression analysis of demographic correlates of utilization of health facilities for other SRH services

| Variables | Ever visited a health facility for other SRH services | | | | |
|---------------------------|---|-------|-------|--------------------|-----------|
| | Odds ratio | SE | t | P-value P > (t) | C.I |
| Place of residence | 0.700 | 0.337 | -0.74 | 0.460 | 0.27-1.80 |
| Gender | 0.603 | 0.263 | -1.16 | 0.247 | 0.26-1.42 |
| Schooling | 0.227 | 0.115 | -2.94 | 0.003* | 0.08-0.61 |
| Employment | 1.993 | 0.858 | 1.60 | 0.110 | 0.86-4.64 |
| Wealth index | 0.891 | 0.127 | -0.81 | 0.417 | 0.67-1.18 |

95% conf. interval, *p<0.01

Discussion

Utilization of health facilities for SRH information and other services among adolescents in Ebonyi State is very low. Health facility utilization for SRH information and services was favorable towards informal service providers such as PMVs. Adolescents not utilizing health

facilities to access available sexual and reproductive health information and other services, increase concerns about the quality of information/service adolescents obtain. This finding is similar to several other findings which revealed poor utilization and postponement of health facility visit by most young people^{20, 21, 22}. Poor utilization could be attributed to poor knowledge and understanding of the importance SRH service utilization in addition to self-treatment perceived as the first choice²⁰. Most health facilities are visited when the need requires a specialized care due to perceived seriousness of the health need²⁰. However, adolescents identified embarrassment and fear of stigmatization as reasons that limits them from accessing and utilizing SRH services¹⁵. The issue of poor access and utilization of health facility for SRH information or services has been emphasized as what should be addressed to promote ASRH because it increases the chance of SRH preventable disease (like STIs, unwanted teenage pregnancy, and unsafe abortion) among adolescent²³.

Adolescents who had ever visited the health facility for SRH information and other services mostly obtain services from Patent Medicine Vendors (PMVs). On the other hand, there are records of other sources like primary health centres, general hospital, mission/private hospitals, youth friendly centres, school clinics and outreach tent for SRH information and services among adolescents but from a lower proportion. Most government owned health facilities were not utilized by adolescents and this present finding relates to another study. The study reported low utilization of formal health facility for SRH needs among adolescents but utilize patent medicine vendor (PMV) shops more than any other health facility as a result of the availability and proximity of PMVs²⁴. However, evidence has shown that some of the services provided in a formal health facilities are not tailored to meet the sexual and reproductive health needs of adolescents²⁵.

Schooling was found to be statistically associated with utilization of health facilities for SRH information and other services. This indicate that variations in utilization of health facilities for SRH information and other services among adolescents exist. Utilization of SRH information and other services was more among out-of-school adolescents, while most adolescents who attend school do not utilize the available health facilities for SRH information or other services. Considering that most adolescents in the study site attend

school, an increased awareness through innovative programs in schools aiming to enlighten these adolescents on the available SRH services would possibly increase access and utilization of health facilities^{26, 27, 28}. Provision of adolescent-friendly health facilities significantly promote utilization of health facilities for information and other services among adolescents^{29, 30}. However, another study observed that higher educational attainment is significantly associated with health facility service utilization for SRH information or other services because of exposure to sexuality education in schools²².

On the contrary, other demographics were not significantly associated with utilization of health facility for SRH information and other services. The adolescents who utilized health facility for SRH information and other services were mostly urban dwellers with more males than females accessing health facilities. Young girls were less likely to utilize health facility for sexual and reproductive health services which is similar to some studies. Unmarried adolescent girls are less likely to seek for sexual and reproductive health information or services because of the sacredness attached to sexual acts and fear of condemnation in most cultures and societies^{22, 30, 31}. However, some other studies reported that female adolescents access health facilities for SRH information when compared to males. It is attributed to the fact that most males perceived that health facilities are tailored to attend to the needs of females^{13, 30, 27}.

Schooling was found to be a strong predictor of utilization of health facilities for SRH information and other services among adolescents in the State. Out-of-school adolescents were three times more likely to visit health facility for SRH information than in-school adolescents. Likewise, in-school adolescents were found to be 4.4 times less likely to utilize health facilities for other SRH services than out-of-school adolescents. This finding is slightly similar with an investigation carried out in Ethiopia which revealed that adolescents who received SRH information from their school teachers were less likely to utilize SRH services than those adolescents who never received SRH information from school teachers³³.

Consequently, there is need to understand and identify the nature of SRH information delivered in schools that deters in-school adolescents from utilizing health facilities for SRH services.

Conclusions

Adolescents' sexual and reproductive health is an essential component of health which can influence a country's long-term national growth. Limited access to SRH services relates with adolescents' susceptibility to sexual health risks which could have been prevented if provided with the right SRH information and other services. In Ebonyi state, the utilization of health facilities for SRH information and other services among adolescents is very low and favorable towards informal service providers such as PMVs.

This wide gap in utilization of health facility for SRH needs among adolescents increases an apprehensive thought around the quality of information adolescents receive. Most SRH services provided to adolescents have not yet met their SRH unique needs, there is need to assist this age group in understanding the significance of accessing and utilizing health facilities. In order to receive the right SRH information and other services for present and future actions, goals and healthy achievements. Outreach programs and sensitizations should be designed specifically to target adolescents, providing them with the right information on how and where to access sexual reproductive and health services.

Schooling was found to be a strong predictor of health facilities utilization for SRH information and other services. Provision of comprehensive and unbiased sex education in schools should be considered to enable adolescents have access to the right SRH information. There is need to continuously revise the nature of sexuality education delivered by teachers in schools and make provisions for school clinics for easy access to SRH information and services. Multiple approaches should be considered to spread and meet the diverse unique needs of the different (males/females, age categories, in/out-of-school, urban/rural) groups of adolescents.

Abbreviations

AOR: Adjusted Odds ratio; ASRH: Adolescent Sexual and Reproductive Health; CI: Confidence Interval; NDHS: Nigeria Demographic Health Survey; STDs: Sexually Transmitted Diseases; UN: United Nations; UNDES: United Nations, Department of Economic and Social Affairs; UNFPA: United Nations Population Fund; UNTH: University of Nigeria Teaching Hospital Enugu; WHO: World Health Organization.

Declarations

Ethical approval and consent to participate

Ethical approval was obtained from the Ethics and Research Committee of University of Nigeria Teaching Hospital (UNTH) Enugu and the Ethics Committee of Ebonyi State Ministry of Health, Abakaliki. During data collection and analysis, the principles of ethical conduct of research involving humans; respect for autonomy through voluntary informed consent, beneficence through favourable balance of benefits and risks, justice through fair inclusion, and privacy of information by anonymised collection and use of data were duly observed. Both verbal and written informed consent were obtained from both the household heads and from study participants (adolescents) before administering the questionnaire.

Consent for publications

We declare that permission for publication was obtained for this study.

Availability of supporting data

The dataset used for this study is available and can be obtained from the lead author upon request. As well as any other material needed.

Competing interests

The authors declare they have no conflict of interest nor competing interests.

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Authors' contributions

CM, OO and NE conceived the idea of the study. IA, CM, UE, CO, OO, NE, participated in the design of the study and data collection. CM, IA performed the statistical analysis and interpretation of result, IA drafted the first version of the manuscript. All the authors contributed in revising the first draft of the paper and approved the final version.

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References

1. Ngilangwa, D. P., Rajesh, S., Kawala, M, et al. Accessibility to sexual and reproductive health and rights education among marginalized youth in selected districts of Tanzania. *The Pan Africa Medical Journal*. 2016;25(2). doi:10.11604/pamj.supp.
2. Wombeogo, M., & Kuuzuing, L. T. Your advice, my choice: a case study of adolescents' reproductive health choices at Nadowli-Kaleo district of the Upper West region of Ghana. *Journal of Nursing and Health Science*.2015;4(5):70-80. Retrieved from www.iosrjournals.org
3. Kothari, M. T., Wang, S., Head, S. K. et al. Trends in Adolescent Reproductive and Sexual Behaviours. DHS Comparative Reports No. 29. Calverton. 2012
4. UNFPA. Adolescent sexual and reproductive health. 2014. Retrieved from Available online at <https://www.unfpa.org/resources/adolescent-sexual-and-reproductive-health>.
5. Onyeonoro, U. U., Oshi, D. C., Ndimele, E. C. et al. Sources of sex information and its effects on sexual practices among in-school female adolescents in Osioma Ngwa LGA, South East Nigeria. *Journal of pediatric and adolescent gynecology*. 2011; 24(5): 294-299.
6. Orji, E. O., & Esimai, O. A. Introduction of sex education into Nigerian schools: the parents', teachers' and students' perspectives. *Journal of Obstetrics and Gynaecology*. 2003; 23(2): 185-188.
7. Sedgh, G., Finer, L. B., Bankole, A. et al. Adolescent, Pregnancy, Birth and Abortion Rates Across Countries: Levels and Rescent Trends . *The Journal of Adolescent Health: official publication of the society for Adolescent Medicine*. 2015; 56: 223-230.

8. Hindin, M. J., & Fatusi, A. O. Adolescent sexual and reproductive health in developing countries: an overview of trends and interventions. *International perspectives on sexual and reproductive health*. 2009; 35(2): 58-62.
9. Dunor, H., & Urassa, J. K. Access to Reproductive Health Services and Factors Contributing to Teenage Pregnancy in Mtwara Region, Tanzania. *Developing Country Studies*. 2017; 7(5): 30-41.
10. Ahanonu, E. L. Attitudes of healthcare providers towards providing contraceptives for unmarried adolescents in Ibadan, Nigeria. *Journal of family & reproductive health*. 2014; 8(1): 33.
11. Boamah, A. E. Sexual Behaviours and Contraceptive Use among Adolescents in Kintampo, Ghana. Dissertation, 48th International Course in Health Development. 2012.
12. Okereke, C. Assessing the Prevalence and Determinants of Adolescents' Unintended Pregnancy and Induced Abortion in Owerri, Nigeria. *J Biosoc Sci*. 2010; 42(5): 619-32.
13. Odo, A. N., Samuel, E. S., Nwagu, E. N. et al. Sexual and reproductive health services (SRHS) for adolescents in Enugu state, Nigeria: a mixed methods approach. 2018; 18(92). doi: 10.1186/s12913-017-2779-x
14. Cortez, R., Saadat, S., Marinda, E. et al. Adolescent Sexual and Reproductive Health in Nigeria. Health, nutrition and population global practice knowledge brief. Washington, DC. © World Bank: World Bank. 2015. Retrieved from <https://openknowledge.worldbank.org/handle/10986/21626>
15. Viner, R. M., Ozer, E. M., Denny, S. et al. Adolescence and the social determinants of health. *The Lancet*. 2012; 379(9826): 1641- 1652.
16. Aderibigbe, S. A., Araoye, M. O., Akande, T. M. et al. Teenage pregnancy and prevalence of abortion among in-school adolescents in North Central, Nigeria. *Asian Social Science*. 2010; 7(1): 122.

1. Commission NP. Legal Notice on Publication of 2006 Census Final Results. In: Federal Republic of Nigeria Official Gazette. 2009; 96: B1-42.

2. USAID. Nigeria Population and Development Ebonyi State. Health Policy Plus (HP+) Project Nigeria . 2017. Retrieved from http://www.healthpolicyplus.com/ns/pubs/7149-7286_EbonyiRAPIDFactSheet.pdf
3. Cleland, J. Illustrative questionnaire for interview-surveys with young people. Asking Young People About Sexual and Reproductive Behaviors. Illustrative Core Instruments, Geneva: World Health Organization. 2001.
4. Sychareun, V., Vongxay, V., Houaboun, S. et al. Determinants of adolescent pregnancy and access to reproductive and sexual health services for married and unmarried adolescents in rural Lao PDR: a qualitative study. BMC Pregnancy and childbirth. 2018; 18(219). doi:<https://doi.org/10.1186/s12884-081-1859-1>
5. Dehne, K. L., & Riedner, G. Sexually Transmitted Infections among Adolescents: The Need for Adequate Health Services. Geneva: World Health Organization. 2005.
6. Abajobir, A. A., & Seme, A. Reproductive health knowledge and services utilization among rural adolescents in east Gojjam zone, Ethiopia: a community-based cross-sectional study. BMC Health Services Research. 2014; 14(138). Retrieved from <http://www.biomedcentral.com/1472-696>
7. Sousa, B. C., Santos, R. S., Santana, K. C. et al. Sexual behavior and associated factors in rural adolescents. Rev Saude Publica, 39: 52. Retrieved from <https://doi.org/10.11606/S1518-8787.2018052006988>
8. Baku, E. A. Influence of Knowledge, Attitude and Beliefs on Adolescent Contraceptive Use in Greater Accra Region, Ghana. West African Journal of Nursing. 2012; 23(2).
9. Raj, A. D., Rabi, B., Amudha, P. et al. Factors associated with teenage pregnancy in South Asia: a systematic review. Health Science Journal. 2010; 4(1): 3-14.
10. Chandra-Mouli, V., McCarraher, R. D., Phillips, J. S. et al. Contraception for adolescents in low and middle income countries: needs, barriers, and access. Reproductive Health. 2014; 11(1): 1-8. Retrieved from <https://reproductive-health-journal.biomedcentral.com/track/pdf/10.1186/1742-4755-11-1>
11. Godia, P. M., Olenja, J. M., Hofman, J. J. et al. Young people's perception of sexual and reproductive health services in Kenya. BMC Health Serv Res. 2014; 14: 172.

12. Godswill, J. Adolescents' Sexual and Reproductive Health Challenges in Northern Nigeria: Road Map to Effective Interventions. *International Letters of Social and Humanistic Sciences*. 2014; 24(1): 2300-2697.
13. Atuyambe, L. M., Kibira, S. P., Muhumuza, C. et al. Understanding sexual and reproductive health needs of adolescents: evidence from a formative evaluation in Wakiso district, Uganda. *Reproductive Health*. 2015; 12(35). doi: 10.1186/s12978-015-0026-7
14. Envuladu, E. A. Exploring the Influencing Factors on Adolescent Sexual Behaviour and Reproductive Health Challenges in Nigeria: A Case Study of Plateau State . *Public health dissertation*.2016.
15. Challa, S., Manu, A., Morhe, E. et al. Multiple levels of social influence on adolescent sexual and reproductive health decision-making and behaviors in Ghana. *Women Health*. 2018; 58(4): 434-450. doi:10.1080/03630242.2017.1306607
16. Capurchande, R., Coene, G., Schockaert, I. et al. "It is challenging... oh, nobody likes it!": a. *BMC Women's Health*. 2016; 16(48): 1-17. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4967333/pdf/12905_2016_Article_326.pdf
17. Binu, W., Marama, T., Gerbaba, M., & Sinaga, M. (2018). Sexual and reproductive health services utilization and associated factors among secondary school students in Nekemte town, Ethiopia . *Reproductive Health*. 2018; 15(64). Retrieved from <https://doi.org/10.1186/s12978-018-0501-z>