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Original Research Article

Unsafe abortion among secondary school girls in a local authority in South-South Nigeria

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ABSTRACT

Background: Voluntary abortion for social reasons is illegal in Nigeria; however, the practice remains mostly clandestine and unsafe with varying consequences and determinants yet to be studied in all settings.

Methods: A descriptive cross-sectional study design was used to assess the prevalence, practice and determinants of termination of pregnancy amongst 119 female Secondary School students in South-South Nigeria.

Results: The prevalence of abortion was 57.1%. Most of the students were above 18years (58.8%), Christian (95.8%) and of rural residence (66.4%). While 58.8% had experienced an unwanted pregnancy, 61.4% had used some form of contraceptive with condom being the commonest (39.5%). Most (89.1%) have heard of abortions while 67.6% and 16.2% have had abortions once and twice respectively with the top reasons for abortion being that they were still in school (33.8%), too young (25.9%) and to avoid shame or stigma associated with the pregnancy (11.7%). Dilation and curettage was the predominant method employed (40.2%) mainly by medical doctors (34.1% and pharmacists (35.6%) while 51 (75%) had post-abort complaints such as pain (41.2%) and bleeding (21.6%). There was a significant association between having an abortion and place of residence (rural more than urban), ($p=0.04$), being pregnant more than once ($p<0.001$), mothers' level of education ($p=0.03$), fathers' level of education ($p=0.02$) and mothers occupation ($p=0.04$).

Conclusions: The prevalence of abortion is high and complicated by high morbidity rate despite a higher contraceptive prevalence rate whose major determinants were the socio-demographic characteristics of the parents. There is a need for early sex education from parents as this can influence abortion perception and practice in later years.

Keywords: Abortion, Adolescents, Determinants, Prevalence, Practice

INTRODUCTION

The termination of pregnancy before the gestational age of foetal viability may be spontaneous or induced. The voluntary induction of abortion in some countries including Nigeria is considered a criminal offence except when it is performed to save the woman's life.¹ The law governing the practice of abortion in Nigeria is restrictive in nature and this has driven the performance of induced abortions for social reasons underground.^{2,3} As a result, most women seeking termination of pregnancy do so

clandestinely in environments lacking minimal standards and often by persons lacking the need skills or both.⁴

About 210 million pregnancies occur annually worldwide, out of this number, about 80 million (38%) are unplanned and 46 million (22%) end in abortions.⁵ A study by the Guttmacher institute and Ipas(organisation) reported that at-least 1.2 million induced abortions occur every year in Nigeria.⁶ Abortions in sub-Saharan Africa are often performed in unsafe environments with the mortality as high as 20-40%.⁷ Unsafe abortion constitutes

56% of all abortions in developing countries.^{8,9} A study in Nigeria reported that Abortion-related mortality accounted for 11.8% of all maternal deaths which were mainly from sepsis and haemorrhage from unsafe procedures.¹⁰ Unsafe abortion is associated with early complications such as sepsis, haemorrhage requiring blood transfusion, uterine and bowel perforation, pelvic abscess, endotoxic shock and renal failure; and long term morbidities such as chronic pelvic pain, cervical incompetence, ectopic pregnancy and infertility.¹¹ The burden of unsafe abortion may be higher than stated because many women do not get to access care in public hospitals.

The burden of abortion complications has been on the increase because of a sexually permissive society that is not matched by contraceptive usage. Contraceptive usage in Nigeria is low with a prevalence of 11-13%.¹² Despite the reluctance to use contraceptives, many women who conceive outside wedlock are unwilling to continue with the pregnancy because of cultural and religious stigmatization. Hence the morbidity and mortality from induced abortion complications is inversely proportional to the contraceptive usage rate as a rise in contraceptive use or effectiveness invariably leads to a decline in induced abortion and vice versa.⁷

The adolescent population accounts for about 1.2 billion people or 1 in 6 of the world's population and for more than 1.1 million deaths in 2016, mostly from preventable or treatable causes including complications of pregnancy and childbirth arising from unprotected sex and underutilisation of contraceptives.¹³ Studies have shown that 14% of all unsafe abortions in low- and middle-income countries are procured by women aged 15-19 years while more than 50% of the global abortion-related mortalities occur in the 15-24 years age group in Africa.^{14,15} The centre for disease control and prevention (CDC) reported that induced abortion among in the 15-19 years age-group accounted for 14.6% of all abortions or 12 abortions per 1000 adolescents in the united states of America.¹⁶ The determinants of the practice of induced abortion found in some studies include parental residence, sexual health education, alcohol consumption, poverty, illiteracy, grand multiparity and non-contraceptive use.^{17,18}

However, to the best of authors knowledge, no published article focused on induced abortion and its determinants among that secondary school students has emanated from this state. The aims of this study therefore were to assess the magnitude, the practice and the determining factors for induced abortion among students in selected secondary schools in a local Government area in South-south, Nigeria. Authors believe this will not only add to the body of knowledge on induced abortion among adolescents, but may produce insights to developing strategies and intervention to mitigate the practice and complications associated with the unsafe abortion in this region.

METHODS

The South-South region is one of the six geopolitical zones in Nigeria where Akwa Ibom state is located. Akwa Ibom state is made-up of thirty-one local government areas. Nsit Ubium is one of the local government areas in the Uyo senatorial district of the state consisting of two clans: Nsit and Ubium with 31 and 33 villages respectively.

The local government area has a land mass of 242.942 km² and a total population of 127,083 people as at the 2006 National census projected to 178,500 in 2016.¹⁹ Nsit Ubium is an oil-producing area, with deposits of clay, gravel and fine sand as well as Nickel deposits. The people are involved in many economic endeavours including farming, fishing and trading.

There are various health institutions (both government and private) at different levels to cater for the health needs of the people. The area also has numerous secondary and primary schools (both public and private).

A descriptive cross-sectional study design was used to assess the prevalence, practice and determinants of unsafe abortion amongst secondary school girls in Nsit Ubium local Government area of Akwa Ibom state, South south Nigeria.

The study populations were SS2 and SS3 senior secondary (SS) school girls in Nsit Ubium local government area of Akwa Ibom state in South South Nigeria.

The minimum calculated sample size for this study was 95 adolescents. This was determined using a previous study by the Guttmacher Institute, Nigeria, published in 2015 with 3.3% incidence of abortion in Nigeria.²⁰

The formula below was used to determine the minimum sample size for the study:

$$\text{Fisher's formula}^{21} n = \frac{z^2 pq}{d^2}$$

Where:

- n = minimum sampling size
- z = standard normal deviate, usually constant given as 1.96
- p = Prevalence of the factor from previous study = 3.3%, 3.3/100, p=0.333
- q = Probability of something not happening (given as 1 - p, 1 - 0.333, q = 0.167)
- d = degree of precision was (given as 0.052)

By substitution,

$$N = \frac{1.96^2 (0.333 \times 0.167)}{0.05^2} = \frac{3.8416 \times 0.05561}{0.0025} = \frac{0.2136}{0.0025} = 85.44$$

Allowing for a 10% non-response rate = $10/100 \times 85.44 = 8.544 + 85 = N = 94$

The minimum sample size of 94 was required for the study. However, 125 questionnaires were distributed to increase the strength and applicability of the findings.

Sampling technique

A simple random sampling technique was used to recruit respondents into the study. Two secondary schools were selected with one each representing Public and Private secondary schools based on their population among schools in the two clans in Nsit Ubium. At each school, every adolescent female in SS2 and SS3 who consented was given an opportunity to ballot until the number to be recruited proportionally from each school was obtained using simple random sampling technique. Either a 'yes' or a 'no' was written on pieces of papers and every adolescent in SS2 and SS3 classes in the schools balloted. Questionnaires were administered to those who pick 'yes' until the proportion of the measured sample size allotted to the school was obtained.

Inclusion criteria

All female students in senior secondary (SS) 2 and SS 3 who consented to participate in the study and picked a "yes" during the balloting process were included.

Exclusion criteria

Those who declined consent to participate in the study and those in lower classes and male students were excluded from the study.

Data collection tool

A structured closed and open-ended questionnaire designed strictly for this work was used. The questionnaire had 3 sections A, B, and C. Section A captured the respondents' socio-demographic data, section B consisted of the students' reproductive health

practices, their knowledge and practice of abortion while section C captured complaint/complications associated with the practice of abortion. The questionnaire was pretested in a different population using students from a different school in the local government area and necessary corrections and adjustments made.

Data collection procedure

The schools (study area) were visited after obtaining necessary ethical clearance and the details of the study discussed with the school's administration and the students. The questionnaires were administered to eligible respondents who consented to it. Further guide when necessary was provided by research assistants. The duly completed copies of the questionnaires were retrieved the same day.

Statistical analysis

Data were cleaned, entered and analyzed using statistical package for social sciences (SPSS) for windows version 25.0. Results were presented in tables and charts. Descriptive statistics (mean and standard deviation) was performed for continuous variables and categorical using proportions. Chi-square test was used to test for association between two variables and level of significant was set at $p < 0.05$.

RESULTS

Of the 125 questionnaires administered to the students, 119 were correctly completed giving a response rate of 95.2% which were analysed and formed the basis for subsequent discussion. The prevalence of abortion was 57.1%. The majority of the students were above 18 years (58.8%), Christians (95.8%), of the Ibibio tribe (67.2%) and resided within the rural part of the local government area (66.4%). Most of their mothers had secondary level of education (35.3%) and were self-employed (41.2%) while the majority of their fathers had post-secondary education (44.5%) and were civil servant (32.8%). Most of the parents (71.4%) were still married at the time (Table 1).

Table 1: Socio-demographic characteristics of respondents.

Characteristics	Frequency	Percent
Age group		
Less than 18	49	41.2
18 and above	70	58.8
Religion		
Christianity	114	95.8
Islam	4	3.4
Traditional worshipper	1	0.8
Tribe		
Ibibio	80	67.2
Anang	26	21.9
Oron	10	8.4
Others	3	2.5
Place of residence		

Continued.

Characteristics	Frequency	Percent
Rural	79	66.4
Urban	40	33.6
Mothers occupation		
Self-employed	49	41.2
Civil servant	26	21.8
Unemployed	21	17.7
Housewife	20	16.8
Others	3	2.5
Fathers occupation		
Civil servant	39	32.8
Housewife	30	25.2
Self employed	29	24.4
Unemployed	18	15.1
Others	3	2.5
Mothers' educational level		
Primary	21	17.7
Secondary	42	35.3
Post-secondary	36	30.3
No formal education	20	16.8
Father educational level		
Primary	11	9.2
Secondary	44	37.0
Post-secondary	53	44.5
No formal education	11	9.2
Parents current marital status		
Single	10	8.4
Married	85	71.4
Divorced	12	10.1
Separated	8	6.7
Widowed	4	3.4

Table 2: Reproductive health practices of respondents.

Characteristics	Frequency	Percent
Ever had an unwanted pregnancy		
Yes	70	58.8
No	49	41.2
Number of unwanted pregnancies (n=70)		
1	51	72.9
2	14	20.0
3	4	5.7
4	1	1.4
Used some/ any contraception prior to pregnant?*** (n=70)		
Yes	43	61.4
No	27	38.6
Type of contraception used (n=43)		
Condom	17	39.5
Tablets/pills	10	23.3
Withdrawal	8	18.6
Injectables	6	14.0
Rhythm/safe method	2	4.6

Table 3: Abortion related practices of respondents.

Characteristics	Frequency	Percent
Ever heard of abortion (n=119)		
Yes	106	89.1
No	13	10.9
Ever had an abortion		
Yes	68	57.1
No	51	42.9
Number of abortions performed (n=68)		
1	46	67.6
2	11	16.2
3	3	4.4
Not specified	8	11.8
Reasons for aborting (n=77)**		
Still in school	26	33.8
Too young	20	25.9
Shame	9	11.7
Afraid of parents	8	10.4
Afraid for her health	6	7.8
Not ready for babies	3	3.9
Partner denied responsibility	2	2.6
Other reasons	3	3.9
**some gave more than one reason		
Methods of abortion (n=82)***		
D and C	33	40.2
Injections	24	29.3
Unknown tablets	11	13.4
Herbs	8	9.8
Put vaginal concoction	2	2.4
Vigorous physical exercise	1	1.2
Others	3	3.7
***some gave more than one method		
Personnel that performed the abortion (n=82)****		
Doctor	28	34.1
Pharmacist	21	25.6
Nurse/midwife	13	15.9
Traditional practice	7	8.5
Community health worker	5	6.1
Others (relative/friends etc.)	8	9.8
****some gave multiples of personnel		
Where did you effect the abortion		
Hospital/clinic	36	42.9
Pharmacy/chemist shop	22	26.2
Maternity/TBA home	12	14.2
Health centre	10	11.9
Others	4	4.8
Who paid for the procedure (n=68)		
Partner	17	25.0
Friend	17	25.0
Respondent	12	17.6
Mother	10	14.7
Other family members	8	11.8
Father	3	4.4
Others	1	1.5

Table 4: Complaints after the procedure.

Characteristics	Frequency	Percent
Any complication from the procedure (n=68)		
Yes	51	75.0
No	17	25.0
Type of complaint (n=57)****		
Pain	24	42.1
Bleeding	15	26.3
Fever	11	19.3
Foul smelling vaginal discharge	6	10.5
Others	1	1.8
****some have multiple complains		
Given any treatment for the complications		
Yes	30	58.8
No	21	41.2
After the abortion, were you given any contraceptive advice/contraception		
No	35	51.5
Yes	24	35.2
don't know	9	13.2
How you felt after the abortion		
Guilty	24	35.3
Relief	16	23.5
Regret	10	14.7
None	12	17.6
Indifferent	6	8.8

Table 5: Association between selected characteristics and abortion status of respondents.

Characteristics	Ever aborted		Total n (%)	Statistical tests and values
	Yes n (%)	No n (%)		
Age group				
10-17	33 (48.5)	16 (31.4)	49 (41.2)	X ² =3.54 P=0.06
18 and above	35 (51.5)	35 (68.6)	70 (58.8)	
Religion				
Christianity	63 (92.7)	51 (100.0)	114 (95.8)	P=0.13
Islam	4 (5.9)	0 (0.0)	4 (3.4)	
Traditional worshipper	1 (1.5)	0 (0.0)	1 (0.8)	
Place of residence				
Rural	40 (58.8)	39 (76.5)	79 (66.4)	X ² = 4.07 P=0.04
Urban	28 (41.2)	12 (23.5)	40 (33.6)	
Ever been pregnant				
Yes	59 (86.8)	11 (21.6)	70 (58.8)	X ² = 51.14 P=0.000
No	9 (13.2)	40 (78.4)	49 (41.2)	
Mothers education				
Primary	9 (13.2)	12 (23.5)	21 (17.7)	P=0.03*F
Secondary	21 (30.9)	21 (41.2)	42 (35.3)	
Post-secondary	21 (30.9)	15 (29.4)	36 (30.3)	
No formal education	4 (25.0)	3 (5.9)	20 (16.8)	
Mothers' education				
Less than secondary	26 (38.2)	15 (29.4)	41 (34.5)	X ² =1.00 P=0.32
Secondary and above	42 (61.8)	36 (70.6)	78 (65.5)	
Fathers' education				
Primary	8 (11.8)	3 (5.9)	11 (9.2)	P=0.004 *F
Secondary	17 (25.0)	27 (52.9)	44 (37.0)	
Post-secondary	33 (48.5)	20 (39.2)	53 (44.5)	
No formal education	10 (14.7)	1 (2.0)	11 (9.2)	

Continued.

Characteristics	Ever aborted		Total n (%)	Statistical tests and values
	Yes n (%)	No n (%)		
Fathers' education				
Below secondary	18 (26.5)	4 (7.8)	22 (18.5)	P=0.02 *F
Secondary and above	50 (73.5)	47 (92.2)	97 (81.5)	
Mothers occupation				
Unemployed	16 (23.5)	5 (9.8)	21 (17.7)	P=0.04
Self-employed	21 (30.9)	28 (54.9)	49 (41.2)	
Civil servant	18 (26.5)	8 (15.7)	26 (21.9)	
Housewife	12 (17.7)	8 (15.7)	20 (16.8)	
Others	1 (1.5)	2 (3.9)	3 (2.5)	

More than half of the respondents (58.8%) had experienced an unwanted pregnancy prior to the study with most (72.9%) of them having been pregnant once. The majority of the students (61.4%) had used some form of contraceptive before they got pregnant. Condom (39.5%) was the commonest contraceptive they used before getting pregnant followed by tablets/pills (23.3%) (Table 2).

Most (89.1%) of the respondents have heard of abortions while 68 (57.1%) have had an abortion; with 67.6% and 16.2% having had the abortion just once and twice respectively.

The top 3 reasons for having an abortion were that they were schooling (33.8%), too young (25.9%) and to avoid shame or stigma associated with the pregnancy (11.7%). The commonest methods of abortion used were dilatation and curettage (D and C) (40.2%) and injections (29.3%); while doctors (34.1%), pharmacists (25.6%) and nurses (15.9%) performed most of the procedure. The majority of the procedures were performed in hospital (42.9%) and pharmacies/chemist shops (26.2%) while 11.9% were carried out in health centres; and were paid for by their partners (25%) and friends (25%) (Table 3).

The majority of the respondents, 68 (75%) had complaints following the procedure; the top three being abdominal pain (42.1%), bleeding (26.3%) and fever (19.3%). Twenty-four (35.2%) received post-abortion contraceptive advice while more than half (51.5%) were not given contraceptives after the abortion. There was a feeling of guilt by 24 (35.3%) of respondents after the abortion while the 23.5% felt relieved even as 10 (14.7%) regretted their action of having had an abortion (Table 4).

The place of residence (rural more than urban), ($p=0.04$), being pregnant more than once ($p<0.001$), mothers' level of education ($p=0.03$), fathers' level of education ($p=0.02$) and mothers' occupation ($p=0.04$) were significantly associated with respondents having an abortion (Table 5).

DISCUSSION

The prevalence of abortion from this study was 57.1%. This is higher than the prevalence rate of unsafe abortion

reported in some studies in the West African subregion.²³⁻

²⁵ It is however lower than the 74.2% reported in Western Nigeria by another author.²⁶ The differences in prevalence may be a product of socioeconomic differences in the populations studied, the geographical location and the study designs as the studies in Ghana were among women of reproductive age groups of 15-48years.^{23,24} while ours, like the Ethiopian study was carried out amongst adolescent secondary school students.²⁵ Admitting to having had an abortion is associated with some degree of stigmatization in our society where religion plays a major role in the day to day life. The assurance of confidentiality without inhibition provided may have aided the ease and freedom with which secret personal information on voluntary termination of pregnancy was reported by the participants.

Most of the respondents had heard of the term abortion and corroborates with findings from another study.²² This is in keeping with reasonable awareness of abortion by a reasonable proportion of the respondents. The prevalence of ever having an unwanted pregnancy in this study was higher than 31.1% reported in another study.²⁴ Almost three-quarters of the respondents with history of abortion had done so once compared to 60.7%; and more had 2 abortion compared to just 0.5% reported.²² This wide variation may be attributed to the possible stigma associated with admitting to repeated induced abortion which was avoided in this study by the assurance of strict confidentiality provided.

About 61.4% of respondent were using some form of contraceptives prior to the unwanted pregnancy and this is significantly higher than the 12% contraceptive usage recorded by a recent national survey and 21.5% reported by Lamina et al.^{27,28} The predominant contraceptive method from this study was the male condom which 39.5% used followed by oral contraceptive pills and the withdrawal method. However, the rate of unwanted pregnancy from this study was significantly high despite the rather relatively high usage of some form of contraception by respondents. This may have resulted from incorrect and inconsistent usage of the reported contraceptives by the respondents. The predominant reason for inducing an abortion from this study was schooling at 23.4%. Schooling was also the reason given

for voluntary termination of termination in other studies.^{23,24} Secondary schools authorities in Nigeria usually expel pregnant students, so affected students opt to terminate their unplanned pregnancies in order to continue in school. Another study however implicated poverty, early sexual debut and ignorance as reasons for inducing abortion among teenagers, which none of this study respondents gave.²⁹ This implies that several factors underlie the practice which may be related to socio-demographic and environmental characteristics.

Induced abortion from this study was predominantly performed by medical doctors; a pattern which was also reported and agreed to by researchers in other studies.^{24,30} However a study by Emechebe et al in Calabar, South-South Nigeria reported quacks to be responsible for most induced abortion.³¹ The finding from this study may have been a product of erroneous perception of all male health care providers in and outside hospital settings as medical doctors. Hospitals were mentioned as facilities where most abortion of the abortions was performed in this study. No distinction was made in this study between Public(government-owned) and private hospitals/clinics, this is in agreement with previous studies which implicated private clinics.^{24,32} It is unlikely that a public hospital would be associated with voluntary termination of unwanted pregnancy for social reasons due to the restrictive abortion laws in Nigeria.^{2,3} It is also possible that respondents who had complications and post abortion care such as uterine evacuation for incomplete abortion in government hospitals may have listed such as part of initial procedure. It is not unusual for women with post-abort complications like incomplete abortion to present in government hospitals where they are offered uterine evacuation and other post-abortion care.

Complaints were reported by the majority of this study respondents after the procedures at a rate that was significantly higher than that reported from a study in another African country.³³ This may be attributed to Nigerian restrictive abortion laws which have driven the practice of induced abortion underground and unsafe.^{2,3} Abdominal pain was reported as the predominant complaint in this study. This did not agree with findings from other studies which reported vaginal bleeding as the predominant complaint.^{22,25,32} This study respondents may have perceived pain as a more distressing condition compared to a mild vaginal bleeding, especially as analgesia and anesthesia may not have been utilized during these clandestine procedures. Other studies however reported sepsis followed by haemorrhage as predominant complications.^{31,32} The variation in pattern, types and rates of different complications may be a result of varying expertise, personnel and environment where the abortions were carried out. Generally, This study respondents received some form of post abortion care that was comparable to that from another study in South West Nigeria, but specifically higher post-abortion contraceptive services.³⁴ Contraception is a reliable approach to reducing unwanted pregnancy and hence

unsafe abortion. Its utilization has however been hindered by the erroneous association of contraceptive usage and sexual permissiveness.

The major determinants of the practice of abortion were place of residence (rural more than urban), being previously pregnant, educational status of both parents and the mother's occupation. Other studies found that being previously pregnant and having a previous history of induced abortion correlated positively with the practice of abortion.^{32,35} Other determinants or predictors of abortion found by other researchers include age, religion, being a Christian and employed and an experience of intimate partner violence.^{32,36-38} These wide variation in predictors seem to show that environment, personal experiences and society may be at play in the determination of the practice of abortion in a particular population.

Limitation of this study were information on termination of abortion amongst the students was based strictly on what was volunteered, hence subject to intentional dis/misinformation beyond our control. The information provided by respondents about their practice of abortion were not observed, hence could not be verified. The questionnaire had nothing on whether the pregnancies were confirmed or assumptions based on missed menses which may be common in this age group.

CONCLUSION

In conclusion, the reported prevalence of abortion in this study is high and above the National figures despite an apparently higher contraceptive prevalence rate. The procedure is unsafe and associated with high morbidity rate. This trend of unwanted pregnancy rates and a resultant high unsafe abortion rate despite contraceptive use indicate incorrect and inconsistent use of their chosen contraceptive methods. The major determinants of abortion practice were the socio-demographic characteristics of the parents. While recommending the need for accelerated reproductive health education in secondary schools in Nigeria, authors suggest that early sex education during the formative years should be provided by parents as these can influence subsequent perception, behaviour and later choices in schools. Authors also recommend replication of this study across other senatorial zones in the state, other states in the geopolitical area and the Nation at large. This authors hope will unearth the true picture of the practice of abortion among adolescents in Nigerian secondary schools.

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