



Prevalence of Induced Abortion amongst Women Attending Antenatal Care Services in a Tertiary Health Institution in Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Author AOA designed the study, wrote the introduction, collected the data and performed the statistical analysis. Author EMI wrote the protocol and wrote the discussion and both authors jointly edited the manuscript.

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ABSTRACT

Introduction/ Background: Induced abortion is a major cause of maternal death and ill-health in developing countries, especially in those with restrictive abortion laws as in Nigeria. Antenatal subjects will form a window through which this aged-long procedure can be reappraised on what was responsible for the survival of those who had an abortion in the past.

Objective: The objective of the study was to investigate the prevalence of induced abortions amongst antenatal attendants.

Methodology: This study was carried out at The Niger Delta University Teaching Hospital, Okolobiri, Nigeria, between April 1st and August 31st, 2016. It was a cross-sectional, retrospective observational study of 352 subjects attending antenatal care at the centre. It was reportage of the respondent's history of terminations of pregnancies in the past using closed-ended pretested questionnaire.

Results: The induced abortion rate for the study was 53.7% of deliveries. The Odds Ratio (OR)

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between unmarried and married women for pregnancy termination was: (OR = 5.65 at 95% CI 3.96 to 8.06, $p < 0.0001$). The odds against having an abortion and live births in the study were: (OR 0.59 at 95% CI 0.45 to 0.78, $p < 0.0001$). The mean gestational age at termination of pregnancies was 7.3 weeks and the age at first pregnancy termination was 21.06 ± 3.27 years. Pregnancies ($n=189$) were terminated because subjects were not married (39.75%) and to further their education (37.0%). Doctors terminated 148 (78.3%) pregnancies, 141 (74.6%) pregnancies were terminated in private clinic settings, 169 (89.4%) said the termination environment was clean, 124 (65.6) experienced febrile morbidity after pregnancy termination. The odds ratio for long term modern contraceptive use by subjects who had a termination of pregnancy ($n=189$), (OR= 4.68, 95% CI 3.27 to 6.69, $P < 0.0001$).

Conclusion: With the degree of febrile morbidity amongst subjects after the procedure, much need to be done to meet WHO standards for safe abortion in countries with restrictive abortion laws.

Keywords: Induced abortion; antenatal clinic attendees; reasons for abortion; who abortion standards; contraceptive use.

1. INTRODUCTION

Induced abortion is a major reproductive health problem in developing countries, Nigeria inclusive. Most often, the sequelae of health outcomes of induced abortion which include maternal morbidity and mortality are directly related to the quality of the care provider, the cleanliness of the environment in which these procedures are carried out and the sterility of instruments used [1,2,3]. When these standard criteria of care are not met, such procedures are referred to as "Unsafe or criminally induced abortion" [4].

One-third of world 205 million annual pregnancies are unintended, a further 20% of these number end up in induced abortion [1,2,3]. In 2013, there were 289,000 global maternal deaths [4] from haemorrhage, sepsis, hypertensive disorders of pregnancy (including pre-eclampsia/eclampsia), obstructed labour and/or prolonged labour [5]. Complications due to unsafe abortion procedures account for an estimated 13% of these maternal deaths worldwide, or 67,000 per year [3].

There are 760,000 cases of induced abortions annually in Nigeria resulting in 20,000 maternal deaths [6]. Nigeria contributes 10% of world annual 20 million abortion cases [7,8,9,10.] Maternal mortality and morbidity figures following abortion procedures are lower in countries with liberalised abortion laws. For instance, following the 'The Abortion Act 1967 as amended by the Human Fertilisation and Embryology Act 1990 in England and Wales, maternal mortality from abortion procedures reduced virtually to zero levels [11]. In 2013, for instance, 190,000 abortions took place in England and Wales,

complications were reported in only 235 cases, there were no maternal deaths [11]. However, in some developing countries in Asia like India, Cambodia, Nepal, there are liberalised abortion laws, but nonetheless many procedures are performed in substandard conditions resulting in high maternal morbidity and mortality figures [12,13,14]. Public health awareness and individual health seeking behavior are very important in stemming the tide of maternal mortality and morbidity arising from abortion procedures.

Two basic issues are critical amongst others as being responsible for the astronomically high maternal mortality and morbidity in women undergoing induced abortions in Nigeria. One of this is restrictive abortion laws that have driven women seeking termination of unwanted pregnancy out of the domain of public hospitals to those of private hospitals and quacks [15]. The prevalence of abortion cases may be under - reported in Nigeria because of the illegality attached to this procedure, records are not kept by operators [15].

The second issue that contributes to maternal mortality and morbidity from induced abortions in Nigeria and some developing countries is contraceptive patronage. Contraceptive patronage among married women in Nigeria is 15% [16]. One modern contraceptive choice made, is one unwanted pregnancy averted and indirectly reduction of one maternal death and morbidity. Most pregnancies in Nigeria are unplanned, menstrual diaries are not kept, pregnancies just come naturally. High unmet need for contraception in Nigeria has led to higher rate of unwanted pregnancy, and indirectly to a higher rate of maternal deaths

through unsafe abortions [17]. In Nigeria, induced termination of pregnancy is erroneously viewed by women in their reproductive years, especially young single unmarried women as a form of family planning method.

2. SUBJECTS AND METHODOLOGY

2.1 Study Setting and Design

This was a retrospective descriptive cross-sectional study of the prevalence of induced abortion amongst consecutive antenatal subjects attending for care at the Niger Delta University Teaching Hospital, Okolobiri, Bayelsa state, Nigeria. The Study area, Niger Delta University Teaching Hospital, Okolobiri is situated in the heart of the Niger Delta region of Nigeria. It is a tertiary health institution whose main objectives besides teaching and research is also to offer community services to peoples of Bayelsa state and the bordering states of Delta, Abia and Imo States.

This study was conducted between April 1st and 31st August 2016. It was reportage of the termination(s) of unwanted pregnancies by women who underwent the procedure in the past but are currently pregnant and attending antenatal care services at the Niger Delta University Teaching Hospital, Okolobiri. This was a convenient sampling method and consecutive consenting women were recruited. A set of structured questionnaires were first administered to 20 antenatal care subjects by interns serving in the hospital, potential errors corrected before they were finally distributed to respondents. This study was carried out at the antenatal care clinic of the Niger Delta University Teaching Hospital, Okolobiri. It took an average of 30 minutes to complete a questionnaire. The questionnaire was designed in English language, the official medium of communication in Nigeria.

2.2 How the Questionnaire was Conceptualized

The questionnaire was developed bearing in mind the World Health Organisation (WHO) definition of unsafe abortion. WHO defines unsafe abortion as 'termination of pregnancy by persons lacking the necessary skills or in an environment not in conformity with minimal medical standards or both [18]. Critically analyzing this definition, are women desiring termination of unwanted pregnancy in Nigeria go

to persons with necessary skills to perform the procedure or in environment that meets WHO international standards for the procedure.. This thought process with an ample sample size form the basis for answering the scientific questions set in the objectives stated below.

2.3 The Objectives of the Study

- To determine a reappraisal of the aged-long procedure of termination of unwanted pregnancies using antenatal care subjects who had undergone this process in the past as a window of study.
- To determine how antenatal care subjects had willfully used termination of unwanted pregnancies as a means of family planning regulation when they were not ready for childbearing in Nigeria?
- To determine where restrictive abortion laws have driven women seeking termination of unwanted pregnancies and how had they fared in the hands of their caregivers? Did the involvement of orthodox care givers impact on morbidity and survival of subjects?
- To determine the sanitary condition of the environments in which these procedures were done and the sterility of instruments used? Do these processes conform to WHO standards?
- To determine the major reasons why a woman would want to terminate an unwanted pregnancy?
- To determine how many pregnancies were terminated by these antenatal care subjects while unmarried and when married? What were the complications that were experienced by the subjects who undergone these procedures?
- To determine the level of contraceptive patronage by this cohort of antenatal subjects studied?

2.4 The practice of abortion procedures in Nigeria

The practice of abortion in Nigeria depends on the category of the care providers carrying out the procedure, ranging from trained doctors and nurses conforming to WHO standards. The preferred means of termination of pregnancies less than 12 weeks is by using Surgical means: 'Dilatation and Curettage (D & C) or manual vacuum aspirator (MVA) in good sanitary conditions. In the face of restrictive abortion

laws, these procedures are performed in private clinics, by doctors and nurses or in private residences or some other locations of choice. The choice of a care provider by the woman desiring the termination of unwanted pregnancy depends on how much she has to pay for such services [19]. Accessibility to a skilled provider depends on whether she lives in an urban or rural area. However, outside these settings, the would - be abortion seeker can fall into the hands of persons with little or no medical knowledge or training (quacks), traditional birth attendants (TBA's), chemist or self administered procedures and medications, The procedures in the hands of quacks are usually performed under unhygienic conditions using dangerous techniques, instruments, and concoctions [19]. Women had used objects like bicycle spokes, sticks on themselves in an attempts to procure abortion. Morbidity and mortality are high when abortions are performed by unskilled persons and under unhygienic conditions.

2.5 Eligibility Criteria

Those subjects who had spontaneous miscarriages were excluded from the study. The focus of the study was the termination of unintended pregnancies.

2.6 Data Analysis

The data collected from the study was entered into SPSS version 20 for analysis.

2.7 Calculation of Sample Size

A prevalence rate of 37% induced abortions amongst antenatal subjects in a similar study done at the University of Uyo Teaching Hospital, Nigeria [19] was applied, using the formula:

$$n = pq / (e/1.96)^2$$

Where,

n = sample size

P = prevalence rate = 37%

q = 100 – p = 100 – 37% = 85%

e = margin of sampling error tolerated at 95% confidence interval = 5%

Hence, $n = 37 \times 63 / (5/1.96)^2$

$$n = 2331 / (5/1.96)^2 = 358.2$$

Adjusting for an attrition or non-compliance rate of 10%

$$= 358 - 36$$

$$= 322$$

3. RESULTS

The mean age of subjects in the study was 29.22 ± 4.98 years with a range of 16-43 years, 117 (33.2%) were primigravidae, 77 (21.9%) had delivered once. The mean parity for the study group was 3.0. One hundred and forty-five (41.2%) subjects have secondary education, 172 (48.9%) had tertiary education. Thirty-one (8.8%) were single, 318 (90.3%) were married. See Table 1 for demographic characteristics of subjects.

Table 1. The Demographic characteristics of subjects

Parity	Frequency	Percentage
0	117	33.2
1	77	21.9
2	65	18.5
3	49	13.9
4	28	8.0
≥ 5	16	4.5
Total	352	100.0
Educational status	Frequency	Percentage
No formal education	4	1.1
Primary	29	8.2
Secondary	145	41.2
Tertiary	174	49.4
Total	352	100.0
Marital status	Frequency	Percentage
Single	31	8.8
Married	318	90.3
Divorced/Separated	1	.3
Remarried	2	.6
Total	352	100.0

3.1 The Terminations of Pregnancies Before and After Marriage, Gestational Age at Termination

One hundred and eighty (51.1%) women underwent termination of pregnancy before marriage. with a mean of 2.0 Fifty-five subjects (15.6%) had termination of pregnancy while in marriage with a mean of 1.3 terminations. Forty-six (13.1%) subjects had termination of pregnancy before and during marriage. Nine (2.6%) of subjects had terminations for the first time while being married. The total number of subjects who had termination of pregnancy both before and while in marriage is 189 (53.7%) which is the abortion rate for the study. The odds ratio for the termination of pregnancy before marriage versus while in marriage is: (O.R = 5.65 at 95% interval 3.9600-8.0645, $p < 0.0001$).The study group had a total of 546 live births while 452 fetuses (unwanted pregnancies) were terminated. The odds ratio for a live birth for the study was: (O.R 0.59 at 95% C.I 0.4544 - 0.7770, $p < 0.0001$). When induced abortion before marriage was paired against educational status at 95% confidence interval, paired t-test) it was statistically significant- $t = - 14.42$, $df 351$, $p < .000$, the result was the same when termination

of pregnancy was paired against educational status, $t = -24.94$, $df 351$, $P < .000$.

The gestational age of the pregnancies at termination was between 4 weeks and 16 weeks. The mean gestational age at termination was 8.124 ± 1.72 years. The mean age at which the first termination of pregnancy was done is 21.06 ± 3.27 , a median of 20 years with a range of 14-33 years.

Seventy-five subjects (39.7%) terminated pregnancy because they were not married, 70 (37.0%) did because they wanted to further their education.). When the reasons for terminating pregnancy were paired against termination of pregnancy while unmarried, $\alpha = 0.05$ the results were statistically significant, $t = 2.114$, $DF 351$ $P < 0.035$ (paired t-test). The results were statistically significant, when reasons to terminate pregnancy were paired against terminations while married: $t = 11.777$, $DF 351$, $p < .000$ (paired t-test). Table 3 shows reasons for termination of pregnancies.

One hundred and forty-eight subjects (78.3%) pregnancies were terminated by doctors, 21 (11.1%) by Nurses, 141 (74.6%) pregnancies were terminated in private clinic settings,

Table 2. Termination of pregnancy while unmarried, married and gestational age when pregnancies were aborted

Terminations while unmarried	Frequency	Percent
Nil	172	48.9
Once	63	17.9
Twice	74	21.0
Thrice	31	8.8
Four	6	1.7
≥ Five	6	1.7
Total	352	100.0
Termination of pregnancy while married		
	Frequency	Percent
Nil	297	84.4
Once	32	9.1
Twice	14	4.0
Three	4	1.1
Four	3	.9
≥ Five	2	.6
Total	352	100.0
Gestational age at termination of pregnancy (n=189)		
Weeks	Frequency	Percent
Four weeks	77	40.7
Eight weeks	82	43.4
Twelve weeks	19	10.1
Sixteen weeks	11	5.8
Total	189	100.0

Table 3. Reasons for terminating pregnancy (n=189)

Reasons for termination	Frequency	Percent
Because you were not married	75	39.7
Your partner denied responsibility	16	8.5
Because you want to further your education	70	37.0
Financial reasons	17	9.0
Your religion forbids having children outside marriage	5	2.6
Previous CS	4	2.1
The last baby too young to have a new pregnancy	2	1.1
Total	189	100.0

19 (10.1%) in doctors' homes. One hundred and sixty-nine subjects (89.4%) described the environment in which the termination of pregnancy was done as being clean. One hundred and fifty-one subjects (80%) said there were other women waiting at the venue of the termination to have the same procedure when they had theirs. Table 4 shows the type of abortion provider, the venue, and the sanitary conditions of the environment for the termination of unwanted pregnancy.

Amongst those who had a termination of pregnancy (before and after marriage, n= 189), the following complications were recorded: 7(3.7%) were admitted to the hospital, 3 (1.6%) had one unit of blood each and 1 (0.5%) had two units of blood transfused respectively. Bleeding after the termination of pregnancy was experienced by 27 (14.3%) subjects, 124 (65.6%) had febrile morbidities and 1 (0, 5%) had an operation after the procedure. A total of 163 (86.2%) of subjects who terminated pregnancy experienced a complication while 26 (13.8%) had no complications. The odds ratio for experiencing complications and the subjects who had induced abortion was: OR= 5.4, C.I 95%, 3.99-8.59, P, < 0.0001.

Three hundred and twenty subjects (90.9%) agreed that terminations of pregnancy cannot be used as a form of family planning. One hundred and eighty-nine (53.7%) subjects have used contraceptives in the past. Amongst those who had used contraception in the past, 67 (19.0%) patronized the emergency contraception, Postinor, 64 subjects (18.2%) used the male condom.

When contraceptive use by subjects was paired against their educational status (paired t-test), the results were statistically significant, t = 21.93, df 351, p< .0001.

The odds ratio for long term modern contraceptive use by those who had termination

of pregnancy (n=189), OR= 4.68, 95% C.I =3.27-6.69, P< 0.0001. Table 5 shows the knowledge and use of contraception.

One hundred and eighty-seven subjects (53.1%) agreed they don't plan their pregnancies. Two hundred and sixty-five subjects in the study got pregnant in the first year of marriage. See table 6 for family planning and fecundity.

When 'How long it took subjects to get pregnant after marriage (fecundity) was paired against 'terminations of pregnancies before marriage' (paired t-test), the result was statistically significant at $\alpha = 0.05$, t = -5997, DF 351, p < .000. Table 6 shows how subjects plan their pregnancies and how long it took them to get pregnant after marriage.

Two hundred and sixty subjects (73.9%) were not aware of abortion laws in Nigeria while 92 (26.1) subjects knew such a law exists.

4. DISCUSSION

The prevalence rate of induced abortion in our study was high at a rate of 53.7% of deliveries. This rate is similar to that of a study done in neighbouring Port-Harcourt of induced abortions amongst undergraduates Students where the prevalence rate was 47.2%. [20]. Both rates at NDUTH and Port-Harcourt are high because undergraduate students will most likely delay child bearing so that they can complete their education. Any resulting pregnancy is likely to be unwanted. Similarly, the most common reason for termination of pregnancy in our study was to allow them complete their education. If such an astronomically high rate of pregnancy terminations is obtained from an institutional study like ours, then the rate in the community and the larger Nigerian society will be explosive. Due to the fact that there is a regulated restrictive abortion law in Nigeria, that has driven abortion seekers underground, there are no national figures outside hospital data as in most

Table 4. Cadre of persons who performed the termination, Venue, cleanliness of the environment (n=189)

Who performed the procedure	Frequency	Percent
Doctor	148	78.3
Nurse	21	11.1
Auxiliary Nurse	6	3.2
Quack	13	6.9
Self Induced	1	0.5
Total	189	100.0
Venue of termination of pregnancy		
Venue	Frequency	Percent
In a private clinic	141	74.6
In the doctor's house	19	10.1
Nurses house	12	6.3
Private residence	16	8.5
At home	1	0.5
Total	189	100.0
Environment in which the termination was done		
Clean	169	89.4
Dirty	20	10.6
Total	189	100.0

Table 5. Knowledge and use of contraception

Can you use D & C to plan your pregnancy?		
Yes	32	9.1
No	320	90.9
Total	352	100.0
Have you ever used contraception?		
Yes	189	53.7
No	163	46.3
Total	352	100.0
If yes, what type of contraceptive used?		
Daily Pill	30	8.5
Progestogen-only pill	8	2.3
Injectables	9	2.6
IUCD	6	1.7
Implant	1	0.3
Postinor	67	19.0
Male condom	64	18.2
Traditional method	4	1.1
Nil use	163	46.3
Total	352	100.0

Table 6. Family planning and fertility

Plan pregnancy	Frequency	Percent
No planning, they come naturally	187	53.1
You discuss with your husband before getting pregnant	165	46.9
Total	352	100.0
How long did it take you to get pregnant after marriage		
	Frequency	Percent
≤ One year	265	75.3
Two years	63	17.9
Three years	10	2.8
Four years	7	2.0
≥ 5 years	7	2.0
Total	352	100.0

sub-Saharan African countries where comparison could be made. However, our prevalence abortion rate is less than that in a similar study in Benin, Nigeria where 78.4% of subjects attending prenatal services reported a previous history of termination of pregnancy [21]. Our results may have differed from the one in Benin because our centre is located in a semi-urban community with less access to facilities to procure abortion than in Benin City. It is also known that rural women are less likely to procure an abortion than those living in urban areas [19].

The prevalence of abortion fell drastically while subjects were married compared to the period the subjects of the study were single. (The odds ratio for the termination of pregnancy before marriage and while married is: (O.R = 5.65 at 95% 3.9600 - 8.0645, $p < 0.0001$). This result is in agreement with a study in Ghana where unmarried women are more likely to procure an abortion than married ones [22]. It was also similar to a study in Ukraine where single women were more likely to terminate a pregnancy than married women - OR 11.8 [23]. Being unmarried and the quest for further education were the two main reasons why women opted for pregnancy termination in our study. In some countries globally, sub-Saharan Africa and Nigeria inclusive, their cultures and religion do not permit single unwedded mothers having children. There is a discriminatory attitude towards such mothers and it is generally believed such behavior is not welcomed in society [24]. In Sri Lanka culture, for example, marriage is valued, and premarital sex is unacceptable and it is regarded as a taboo. Young women in Sri Lanka are supposed to live with their families, until they are married. Any premarital sex or pregnancy brings shame to the family [25]. In some African cultures, single mothers do not transit into marriage easily [26]. In all these circumstances, women would rather choose to have an abortion rather than having a baby outside wedlock [24,25,26]. In some cultures, even without discrimination, single mothers are more likely to request for an abortion. In 2014, for example, in the United States of America, 46% of all induced abortion was by unmarried mothers [27].

The odds against having an abortive process was very low in the study as live births almost ranked with the number of induced terminations (O.R 0.59 at 95% C.I 0.4544 - 0.7770, $p < 0.0001$). Women continue to use induced abortion, an age-old form of fertility regulation to plan their families with its attendant

complications of maternal morbidity, mortality, and sub-fertility, the forerunner of unsafe abortion [28,29].

Women in our study were highly educated, and it has been shown that the prevalence of induced abortion is more in such women than those who are less educated [21,30]. The results were statistically significant when induced abortion before marriage was paired against educational status in a paired t-test in our study. The results were the same when induced abortion while in marriage was also paired with education in a t-test. A woman with unwanted pregnancy while in educational pursuit will likely go for induced abortion.

The mean age at which the first termination of pregnancy was done by subjects was at a period when they were transiting from teenage-hood to adulthood. This is an age where sound decisions in life are necessary especially regarding reproductive health. This would have been expected from the study group regarding their high educational background. However, the paradox was the case as more than half of the study subjects were weighed down with unwanted pregnancies which eventually culminated into induced abortion with its health implications. This abnormal social behaviour is common amongst educated women globally especially in sub-Saharan Africa, South East Asia, and amongst Afro-Americans. It is one of the root causes of single motherhood and unsafe abortion globally [21,22,30,31].

There were some complications in our study, many were minor. This could be because most procedures were done by doctors and mean gestation age at termination was in the first trimester [1]. Complications of induced abortions are expected to rise with increasing gestational age at termination [32,33]. Overwhelming majority of subjects in the study said there were other women waiting to have an abortive process when they had their own procedure. This is the point where abortion seekers contracts pelvic infections because the care provider who does not have sterilizing equipment will simply transfer infection from one client to the other.

Overwhelmingly, termination of pregnancies in this study were done by trained doctors, thereby fulfilling World Health Organisation (WHO) criteria for safe abortion. However 1:10 terminations were performed by persons who are not trained or empowered by medical ethics to

carry out such procedures thereby endangering the lives of their clients. A maternal death or morbidity is of great consequence to both family and society at large. The majority of induced terminations were carried out in private clinics. This is the trend in countries with restrictive abortions laws, where terminations of unwanted pregnancies are done clandestinely in private clinics and by quacks as shown in this study [6]. While the environment of the pregnancy terminations was described by subjects as being clean, also meeting WHO criteria for safe abortion. However, the 'cleanliness' in reality may have been compromised as the majority of subjects who had terminations of pregnancy experienced febrile morbidity. This circumstance may have arisen either due to poor sanitary conditions of the environment or antibiotics were not prescribed according to best practice [34]. Due to prohibitive abortion laws, women seeking abortion are driven underground into hands of private practitioners and quacks in settings that are not regulated by any medical authority [6].

On testing the knowledge of the study subjects on using induced abortion as a form of family planning, the overwhelming majority disagreed with such a notion, but in practice, that is what half of the subjects did. The mean age of the study subjects showed that they were young women with a long obstetric career ahead of them, who will require modern contraceptive methods to regulate their fertility at one point in time in their life. Only half of the subjects have ever used a modern contraceptive method. Amongst those who had used contraception, the majority used the emergency contraception, Postinor, and the male condom. Postinor needs a lot of awareness and knowledge for use effectiveness, while the male condom needs motivation before use. Only 14.1 % study subjects used a long time contraceptive method. This is the trend of contraceptive usage nationwide as only 15% of married women in Nigeria use modern contraceptive method [17]. There was a great unmet need for contraception amongst study subjects and in Nigeria, in general.

More than half of the subjects did not plan their pregnancies while their fecundity was very high bringing the unmet need for contraception to the fore again.

Less than a third of subjects knew about restrictive abortion laws in Nigeria. However, for

the fact that such laws exist, public health facilities would not accept induced abortion on request and breach of this law in Nigeria is seldom reported to the authorities and offenders not often prosecuted.

5. CONCLUSION

There was a high rate of termination of unwanted pregnancies in the study due to low contraceptive patronage and the misconception that induced abortion can conventionally be used as a form of family planning. There should be increased advocacy in the Community, churches, mosques, schools on knowledge, use and the benefits arising from contraceptive patronage. If pregnancies are prevented, the need for termination of unwanted pregnancies would not arise.

6. LIMITATIONS TO THE STUDY

This is a questionnaire study. Convenient sampling may not truly be a representative of the population: there may be bias, because it was a memory recall it would be difficult to recount all that trespassed during the terminations in the past. The subjects of this study are those who survived the ordeal of termination(s) of pregnancies in the past. Those who suffered morbidities including infertility or died were not captured.

CONSENT

It is not applicable.

ETHICAL APPROVAL

The study was approved by the ethical committee of the Niger Delta University Teaching Hospital, Okolobiri.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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