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

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 1st, 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 537/1000 pregnancies. The Odds Ratio (OR) 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.

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Key Words: Induced abortion, Antenatal clinic attendees, Reasons for abortion, WHO abortion standards, Contraceptive use.

Background to the study: Induced abortion is a major contributor to maternal deaths worldwide especially in sub-Saharan Africa. Induced abortions are more in countries like Nigeria with restrictive abortion laws and low contraceptive patronage. Antenatal women who had previously undergone this procedure will form a window, through which a reappraisal of the age-long practice of induced abortion can be re-visited. Is there any change in the caliber of persons doing these abortion procedures, the sterility of the environment in which these procedures are carried out. Are women seeking termination of unwanted pregnancies able to make better choices on which cadre of care providers to patronize in the face of restrictive abortion laws in Nigeria? What are the reasons why women would want to terminate unwanted pregnancies? What is the status of their use of modern contraceptive methods?

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. 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.

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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.

Complications of induced abortions include uterine perforation, haemorrhage, sepsis, chronic pelvic inflammatory disease, tubal blockage and consequent infertility, ectopic pregnancy. Other complications include repeated late first trimester and premature births from cervical insufficiency, chronic ill health and maternal deaths.

It is a common observation in everyday antenatal care practice that most subjects as shown by their case histories have undergone one or more terminations before starting a childbearing career or while in marriage to regulate their family size. In this study, we try to find out where restrictive abortion laws had driven women seeking termination of unwanted pregnancy and how had they fared in the hands of their caregivers. Even though these procedures were done under the shadow of the dark, how has the involvements of orthodox caregivers impacted on morbidity and survival of subjects? We also sought to know the reasons for self-induced abortions and the level of contraceptive patronage amongst abortion seekers.

Methodology

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. This study was conducted between April 1st and 1st 2015. A set of structured questionnaires were first administered to 20 antenatal subjects, potential errors corrected before the study questionnaires were finally distributed to respondents.

Mothers consent were sought and obtained before the questionnaires were administered to them.

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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.

Eligibility Criteria

All pregnant women attending antenatal care in this centre were recruited for the study. Those subjects who had spontaneous miscarriages were excluded from the study because the focus of the study was unintended pregnancies that were terminated.

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, $n = 37 X 63/ (5/1.96)^2$
$n = 2331/(5/1.96)^2$
358.2

Adjusting for an attrition or non-compliance rate of 10%
= 358-36
= 322

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 2.55 ± 1.490. One hundred and forty-five (41.2%) subjects have secondary education, 172 (48.9%) had tertiary education. Fifty-one subjects (14.5%) were of the Catholic faith, 53 (15.1%) were Protestants and 203 (57.7%) were Pentecostals. Thirty-one (8.8%) were single, 318 (90.8 %) were married. See table 1 for demographic characteristics of subjects.

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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	172	48.9
6.00	1	.3
27.00	1	.3
Total	352	100.0
Marital Status	Frequency	Percentage
Single	31	8.8
Divorced/Seperated	1	.3
Remarried	1	.3
9.00	1	.3
Total	352	100.0

The terminations of pregnancies before and after marriage, gestational age at termination.

Before marriage, 180(51.1%) subjects undergone termination of pregnancy 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 in marriage. 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) 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 group of study had a total of 546 live births and a total induced abortion fetal wastage (as different from reasons for conventional fetal wastage) from of 452 fetuses. The odds ratio for a pregnancy not being terminated from 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, df351, $P< .000$.

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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 (Fego, pls recalculate). 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. See table 2 for pregnancy termination before and while in marriage and the gestational at termination.

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

Seventy-five subjects (39.7%) terminated pregnancy because they were not married, 70 (37.0%) did because they want 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).

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See table 3, for reasons why subjects terminated pregnancy.

Table 3 Reasons for terminating pregnancy (n=189)

Reasons for termination of pregnancy.

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
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

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, 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. See table 3 for the caliber of persons who assisted the subjects in terminating pregnancies, the venue where the procedure was carried out and the cleanliness of the environment

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

Who performed the procedure	Frequeny	Percent
Doctor	148	78.3
Nurse	21	11,1
Auxiliary Nurse	6	3.2
Quack	13	6.9
Self Induced	1	0.5

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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

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.

See table 5 on the knowledge and use of contraception.

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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

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. 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	**Frequency**	**Percent**

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pregnant after marriage		
≤ 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

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

Discussion.

The prevalence rate of induced abortion in our study was high at a rate of 537 /1,000 pregnancies. If such an astronomically high rate of pregnancy terminations is obtained from an institutional study, 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 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 (20). 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 (21). 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 were suppose 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).

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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 (20, 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 (20, 22, 30, 31).

Complications of induced abortion in the study were much but of minor nature, because 94% of the procedures were done in the first trimester and the overwhelming majority of them were performed by trained private practitioners (1). Complications of induced abortions are expected to rise with increasing gestational age at termination (32, 33). Best practice demands that first-trimester induced abortions can be managed by surgical manual vacuum aspiration or medical termination within 63 days of the last menstrual period (34). Most first trimester terminations of pregnancy in Nigeria are usually carried out by surgical manual vacuum aspiration (1) as against medical terminations due to the cost of mifepristone (£52.66 x N 408.734 = N 21,524) that is used in combination with misoprostol in the latter method (35). Overwhelming majority of subjects in the said there were other women waiting to have an abortive process when they had their own procedure. Most often, this is the point where clients of induced abortion contacts lower genital tract infection in substandard environments as the plastic manual vacuum aspirator being use is not disposable and there is no enough time to sterilize their instruments properly before use.

Overwhelming termination of pregnancies in this study was 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. What prohibitive abortion laws have successfully done is to drive abortion seekers in countries who proclaim such laws, including

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Nigeria into the hands of private practitioners (1) and into the hands of quacks as was exemplified in this study. 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 (35). 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.

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, the former needs a lot of awareness and knowledge, the latter 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 (36). 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.

Conclusion

These were young women in the prime of their fertility period in their lifetime, who want to postpone child bearing because they were not married and because they want to further their education but they could not do so because of high umetneed for contraception. They were confronted with unwanted pregnancy, had no option than to go underground to seek an abortive process that was not safe. Much advocacy on modern contraceptive methods, including inculcating family planning into secondary schools curricula and ready access to contraception is advocated.

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