

# 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 1<sup>st</sup> and August 1<sup>st</sup>, 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  $\pm$  and the age at first pregnancy termination was 21.06  $\pm$  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.

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

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

## 47 **Introduction**

48 Induced abortion is a major reproductive health problem in developing countries, Nigeria  
49 inclusive. Most often, the sequelae of health outcomes of induced abortion which include  
50 maternal morbidity and mortality are directly related to the quality of the care provider, the  
51 cleanliness of the environment in which these procedures are carried out and the sterility of  
52 instruments used. When these standard criteria of care are not met, such procedures are  
53 referred to as “Unsafe or criminally induced abortion” (4).

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

60 There are 760,000 cases of induced abortions annually in Nigeria resulting in 20,000  
61 maternal deaths (6). Nigeria contributes 10% of world annual 20 million abortion cases (7, 8,  
62 9, 10 ). Maternal mortality and morbidity figures following abortion procedures are lower in  
63 countries with liberalised abortion laws. For instance, following the ‘The Abortion Act 1967  
64 as amended by the Human Fertilisation and Embryology Act 1990 in England and Wales,  
65 maternal mortality from abortion procedures reduced virtually to zero levels(11). In 2013, for  
66 instance, 190,000 abortions took place in England and Wales, complications were reported in  
67 only 235 cases, there were no maternal deaths (11). However, in some developing countries  
68 in Asia like India, Cambodia, Nepal, there are liberalised abortion laws, but nonetheless  
69 many procedures are performed in substandard conditions resulting in high maternal  
70 morbidity and mortality figures (12, 13, 14). Public health awareness and individual health  
71 seeking behavior are very important in stemming the tide of maternal mortality and morbidity  
72 arising from abortion procedures.

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

79 The second issue that contributes to maternal mortality and morbidity from induced abortions  
80 in Nigeria and some developing countries is contraceptive patronage. Contraceptive  
81 patronage among married women in Nigeria is 15% (16). One modern contraceptive choice  
82 made, is one unwanted pregnancy averted and indirectly reduction of one maternal death and  
83 morbidity. Most pregnancies in Nigeria are unplanned, menstrual diaries are not kept,  
84 pregnancies just come naturally. High unmet need for contraception in Nigeria has led to  
85 higher rate of unwanted pregnancy, and indirectly to a higher rate of maternal deaths through  
86 unsafe abortions (17). In Nigeria, induced termination of pregnancy is erroneously viewed by  
87 women in their reproductive years, especially young single unmarried women as a form of  
88 family planning method.

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

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



## 102 **Methodology**

103 This was a retrospective descriptive cross-sectional study of the prevalence of induced  
104 abortion amongst consecutive antenatal subjects attending for care at the Niger Delta  
105 University Teaching Hospital, Okolobiri, Bayelsa state, Nigeria. This study was conducted  
106 between April 1<sup>st</sup> and 1<sup>st</sup> 2015. A set of structured questionnaires were first administered to  
107 20 antenatal subjects, potential errors corrected before the study questionnaires were finally  
108 distributed to respondents.

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

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 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<sup>19</sup> 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,  $n = 37 \times 85 / (5/1.96)^2$

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

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  $29.22 \pm 4.98$  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  $2.55 \pm 1.490$ . 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.

147 **Table 1. The Demographic characteristics of subjects.**

| Parity                    | Frequency        | Percentage 148    |
|---------------------------|------------------|-------------------|
| 0                         | 117              | 33.2              |
| 1                         | 77               | 21.9              |
| 2                         | 65               | 18.5              |
| 3                         | 49               | 13.9              |
| 4                         | 28               | 8.0               |
| ≥ 5                       | 16               | 4.5               |
| <b>Total</b>              | <b>352</b>       | <b>100.0</b>      |
| <b>Educational Status</b> | <b>Frequency</b> | <b>Percentage</b> |
| 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                |
| <b>Total</b>              | <b>352</b>       | <b>100.0</b>      |
| <b>Marital Status</b>     | <b>Frequency</b> | <b>Percentage</b> |
| Single                    | 31               | 8.8               |
| Divorced/Seperated        | 1                | .3                |
| Remarried                 | 1                | .3                |
| 9.00                      | 1                | .3                |
| <b>Total</b>              | <b>352</b>       | <b>100.0</b>      |

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



151 Before marriage, 180(51.1%) subjects undergone termination of pregnancy with a mean of  
 152 2.0 ± . Fifty-five subjects (15.6%) had termination of pregnancy while in marriage with a mean  
 153 of 1.3 ± terminations. Forty-six (13.1%) subjects had termination of pregnancy before and  
 154 during marriage. Nine (2.6%) of subjects had terminations for the first time while in  
 155 marriage. The total number of subjects who had termination of pregnancy both before and  
 156 while in marriage is 189 (53.7%) which is the abortion rate for the study. The odds ratio)  
 157 ratio for the termination of pregnancy before marriage versus while in marriage is: (O.R =  
 158 5.65 at 95% interval 3.9600-8.0645, p < 0.0001).The group of study had a total of 546 live  
 159 births and a total induced abortion fetal wastage (as different from reasons for conventional  
 160 fetal wastage) from of 452 fetuses. The odds ratio for a pregnancy not being terminated from  
 161 the study was: (O.R 0.59 at 95% C.I 0.4544 - 0.7770, p<0.0001). When induced abortion  
 162 before marriage was paired against educational status at 95 % confidence interval, paired t-  
 163 test) it was statistically significant- t= - 14.42, df 351, p< .000, the result was the same when  
 164 termination of pregnancy was paired against educational status, t=-24.94, df351, P< .000.

165 The gestational age of the pregnancies at termination was between 4 weeks and 8 weeks.  
 166 The mean gestational age at termination was  $8.124 \pm 1.72$  (Fego, pls recalculate). The mean  
 167 age at which the first termination of pregnancy was done is  $21.06 \pm 3.27$ , a median of 20  
 168 years with a range of 14-33 years. See table 2 for pregnancy termination before and while in  
 169 marriage and the gestational at termination.

170 **Table 2 .Termination of pregnancy while unmarried, married and gestational age when**  
 171 **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   |
| 172 | <b>Termination of pregnancy while married</b>              |           |         |
|     |                                                            | 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   |
| 173 | <b>Gestational age at termination of pregnancy (n=189)</b> |           |         |
| 174 |                                                            |           |         |
| 175 | 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   |

176  
 177 Seventy-five subjects (39.7%) terminated pregnancy because they were not married, 70  
 178 (37.0%) did because they want to further their education.). When the reasons for terminating  
 179 pregnancy were paired against termination of pregnancy while unmarried,  $\alpha = 0.05$  the results  
 180 were statistically significant,  $t = 2.114$ , DF 351  $P < 0.035$  (paired t-test). the results were  
 181 statistically significant, when reasons to terminate pregnancy were paired against  
 182 terminations while married:  $t = 11.777$ , DF 351,  $p < .000$  (paired t-test).

183 See table 3, for reasons why subjects terminated pregnancy.

184

185 **Table 3 Reasons for terminating pregnancy (n=189)**

186 **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   |

187

188 One hundred and forty-eight subjects (78.3% %) pregnancies were terminated by doctors,  
 189 21 (11.1%) by Nurses, 141 (74.6%) pregnancies were terminated in private clinic settings, 19  
 190 (10.1%) in doctors' homes. One hundred and sixty-nine subjects (89.4%) described the  
 191 environment in which the termination of pregnancy was done as being clean. One hundred  
 192 and fifty-one subjects (80%) said there were other women waiting at the venue of the  
 193 termination to have the same procedure when they had theirs. See table 5 for the caliber of  
 194 persons who assisted the subjects in terminating pregnancies, the venue where the procedure  
 195 was carried out and the cleanliness of the environment

196

197

198 **Table 4. Cadre of persons who performed the termination, Venue, Cleanliness of the**  
 199 **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     |

|     |                                                      |           |         |
|-----|------------------------------------------------------|-----------|---------|
| 200 | Total                                                | 189       | 100.0   |
|     | <b>Venue of termination of pregnancy</b>             |           |         |
|     | 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   |
| 201 | <b>Environment in which the termination was done</b> |           |         |
|     | Clean                                                | 169       | 89.4    |
|     | Dirty                                                | 20        | 10.6    |
|     | Total                                                | 189       | 100     |

202

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

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

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

218 The odds ratio for long term modern contraceptive use by those who had termination of  
 219 pregnancy (n=189), OR= 4.68, 95% C.I =3.27-6.69, P< 0.0001.

220 See table 5 on the knowledge and use of contraception.

221

222

223

224 **Table 5**  
225 **Knowledge and use of contraception**

|                                                     |     |       |
|-----------------------------------------------------|-----|-------|
| <b>Can you use D&amp; C to plan your pregnancy?</b> |     |       |
| Yes                                                 | 32  | 9.1   |
| No                                                  | 320 | 90.9  |
| Total                                               | 352 | 100.0 |
| <b>Have you ever used contraception?</b>            |     |       |
| Yes                                                 | 189 | 53.7  |
| No                                                  | 163 | 46.3  |
| Total                                               | 352 | 100.0 |
| <b>If yes, what type of contraceptive used?</b>     |     |       |
| 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   |

226  
227 One hundred and eighty-seven subjects (53.1%) agreed they don't plan their pregnancies.  
228 Two hundred and sixty-five subjects in the study got pregnant in the first year of marriage.  
229 See table 6 for family planning and fecundity.  
230 When 'How long it took subjects to get pregnant after marriage (fecundity) was paired  
231 against 'terminations of pregnancies before marriage' (paired t-test), the result was  
232 statistically significant at  $\alpha = 0.05$ ,  $t = -5997$ ,  $DF\ 351$ ,  $p < .000$ .

233  
234 **Table 6. Family planning and Fertility**  
235

|                                                       |                  |                |
|-------------------------------------------------------|------------------|----------------|
| <b>Plan pregnancy</b>                                 | <b>Frequency</b> | <b>Percent</b> |
| No planning, they come naturally                      | 187              | 53.1           |
| You discuss with your husband before getting pregnant | 165              | 46.9           |
| Total                                                 | 352              | 100.0          |
| <b>How long did it take you to get</b>                | <b>Frequency</b> | <b>Percent</b> |

**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 |

236

237 Two hundred and sixty subjects (73.9%) were not aware of abortion laws in Nigeria while 92  
238 (26.1) subjects knew such a law exist. 

239 **Discussion.** 

240 The prevalence rate of induced abortion in our study was high at a rate of 537 /1,000  
241 pregnancies. If such an astronomically high rate of pregnancy terminations is obtained from  
242 an institutional study, then the rate in the community and the larger Nigerian society will be  
243 explosive. Due to the fact that there is a regulated restrictive abortion law in Nigeria, that has  
244 driven abortion seekers underground, there are no national figures outside hospital data as in  
245 most sub- Saharan African countries where comparison could be made. However, our  
246 prevalence abortion rate is less than that in a similar study in Benin, Nigeria where 78.4 % of  
247 subjects attending prenatal services reported a previous history of termination of pregnancy  
248 (20). Our results may have differed from the one in Benin because our centre is located in a  
249 semi-urban community with less access to facilities to procure abortion than in Benin City.  
250 It is also known that rural women are less likely to procure an abortion than those living in  
251 urban areas (21). The prevalence of abortion fell drastically while subjects were married  
252 compared to the period the subjects of the study were single. (The odds ratio for the  
253 termination of pregnancy before marriage and while married is: (O.R = 5.65 at 95% 3.9600 -  
254 8.0645,  $p < 0.0001$ ). This result is in agreement with a study in Ghana where unmarried  
255 women are more likely to procure an abortion than married ones (22). It was also similar to a  
256 study in Ukraine where single women were more likely to terminate a pregnancy than  
257 married women - OR 11.8 (23). Being unmarried and the quest for further education were the  
258 two main reasons why women opted for pregnancy termination in our study. In some  
259 countries globally, sub-Saharan Africa and Nigeria inclusive, their cultures and religion do  
260 not permit single unwedded mothers having children. There is a discriminatory attitude  
261 towards such mothers and it is generally believed such behavior is not welcomed in society  
262 (24). In Sri Lanka culture, for example, marriage is valued, and premarital  is  
263 unacceptable and it is regarded as a taboo. Young women in Sri Lanka were suppose to live  
264 with their families, until they are married. Any premarital sex or pregnancy brings shame to  
265 the family.(25). In some African cultures, single mothers do not transit into marriage easily  
266 (26). In all these circumstances, women would rather choose to have an abortion rather than  
267 having a baby outside wedlock (24, 25, 26). In some cultures, even without discrimination,  
268 single mothers are more likely to request for an abortion. In 2014, for example, in the United  
269 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 (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  $N \frac{400}{734} = N 21,524$ ) 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

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 unmet need 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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