# Abortion Seeking Behavior among Nigerian Women

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## Introduction

Abortion is illegal in Nigeria,[1] but the behavior is not uncommon among women. It is estimated that about 600,000 abortions occur annually and about 25 out of 1,000 women of childbearing age obtain an abortion in a year.[2] Unfortunately, most of these abortions occur under unsafe conditions and constitute a major source of maternal morbidity and mortality. About 44% of women having abortions in Nigeria are believed to experience complications and induced abortion is a cause of chronic pelvic inflammatory disease, ectopic pregnancy and secondary infertility among Nigerian women.[3] Consequently, unsafe abortion is a major cause of maternal mortality as it accounts for as many as 40% of maternal deaths in the country.[4] In addition to its effects on the health and well-being of women, unsafe abortion is also taking its toll on the society. The high proportion of hospital gynecological admissions resulting from complications of unsafe induced abortion imposes heavy burden on the fragile health care system. Consequently, the system often lacks the human and financial resources required to effectively treat patients of abortion complications.

Available evidence from national surveys suggests that the number of abortions in the country remains high, and is perhaps increasing, because more and more women and men want fewer children.[5] In-spite of the trend towards declining fertility preferences, contraceptive use remains low and unwanted pregnancy is on the increase. About 20% of all births in the 5 years preceding the 1999 NDHS are mistimed or unwanted compared to only 10% of births in the 5 years prior to the 1990 NDHS.[6] On average, Nigerian women are already having 0.5 children more than they want to have.[7] When people come to the point where they see the advantage of small family size and decide to they want fewer children, they will use a combination of ways, such as modern or traditional methods of family planning and abortion, to achieve this.[8] Unless adequate measures are taken to prevent unwanted pregnancy, primarily through the use of effective contraceptives or delayed sexual initiation among young women and men, the incidence of unsafe abortion and the attendant problems are likely to rise as more couples see the values of small family size.

Since abortion is allowed in Nigeria only to save the life of a woman, how do hundreds of thousands of women who obtain abortions annually in Nigeria obtain the service? While it is easy and reasonable to imagine that in a condition where abortion law is restrictive a lot of abortions will take place under unsafe conditions, not much is known empirically about this important situation. It is believed that most abortions in the country are carried out "clandestinely by poorly trained individuals …."[9] Unsafe abortion may be undertaken by women themselves, they may seek the service of a non-medical person or that of a health worker in an unhygienic condition. Abortions done under such conditions may involve insertion of a solid object into the uterus, an improperly performed dilation and curettage procedure, ingestion of harmful substances, or exertion of external force.[10]

In a 1996 survey, a sample of health professionals was interviewed to obtain their perceptions about the condition under which abortions take place in Nigeria. Findings from this survey provide some insight into the type of providers women go to obtain abortions and the methods used by these providers to provide abortion services. Although

the results differ markedly by poverty status and residence, the study indicated that health professionals believed that physicians were the most commonly seen (32%) by women who wanted an abortion, followed by chemists (23%) and nurses/midwives (21%).[11] The health professionals also ventured a view on the most common method of abortion. The results suggest that dilation and curettage is the most commonly used method by physicians, while non-physicians most commonly used herbal solutions or indigenous medicine.[12]

Beyond this, little is known about the process women take to obtain abortions and how these processes relate to experience of complications. For example, how long do women who do not want a pregnancy wait to seek abortion services? Do women involve the partner responsible for the pregnancy in the decision making? How persistent are women in terms of the number of attempts made to obtain an abortion? What consequences do these decisions have on the health of the women? And how many are unsuccessful in their attempt to terminate a pregnancy?

Given the restrictive abortion law in Nigeria, it is of policy and program relevance to know how women seek to stop an unwanted pregnancy in this context. This paper utilizes data from a recently concluded community-based survey of unwanted pregnancy and abortion among women to examine the process that women undertake in seeking abortion in Nigeria. Using information collected from women themselves, it highlights the key elements of the process: the time interval between the occurrence of the pregnancy and the abortion, the kind of providers seen, the methods used, the number of attempts made and the risk and consequences associated with the process of obtaining the abortion. The paper also examines the factors associated with these elements.

## Data source and method of analysis

The data used in this paper come from a household based sample survey of women aged 15-49. The survey was conducted in late 2002 to mid 2003 in 8 states in Nigeria. The states (Ekiti, Gombe, Kano, Kogi, Lagos, Imo and Rivers) were selected such that 2 states came from each of the original 4 health zones (Northeast, Northwest, Southeast and Southwest). Using the rural-urban distribution of women in the 1999 Nigeria Demographic and Health Survey (NDHS) as the basis, the state that was mostly urban and the one that was mostly rural was chosen in each of the health zones. To take account of recent change in the zoning of the country, the states were selected such that at least one state came from each of the current 6 geo-political zones (North-East, North-West, Central, South-East, South-West and South-South). In each state, 20 enumeration areas (EAs), 10 urban and 10 rural, were selected. In each of the EAs, 20 households were randomly selected for interview using systematic random sampling approach. One eligible woman was selected for interview in each household to yield a total sample size of 3,200 women. At the end of the survey, 3,020 women were successfully interviewed. The shortfall occurred largely from Rivers state where the interviewers did not complete the interview at the time the survey was officially ended. The supervisor failed to perform her duties, despite several appeals through visits and phone calls by survey coordinators and repeated promises that she would do so.

Data collection was undertaken through a questionnaire administered using face-to-face interview approach. The questionnaire contains questions on the following topics: socio-economic and demographic characteristics of respondents; pregnancy and fertility behavior and preferences; contraceptive use history and intention; sexual initiation and current sexual activity; experiences of unintended pregnancy and induced abortion; knowledge about abortion laws and attitudes towards induced abortion.

The section of the questionnaire that focuses on unwanted pregnancy obtained detailed information on the last abortion experience for women who have ever tried to obtain one. Three questions were used to identify whether or not a woman had attempted to have an abortion. First, women were asked if they have ever had a pregnancy that they did not want. Second, those who answered no to this question were also asked if they have ever had a pregnancy that would have caused difficulties for them because of their circumstances or the opposition of someone else to the pregnancy, even though they may have desired it. Those who said yes to either of the two questions were asked to indicate how many times this had happened. Then they were asked if they had ever done or used anything to stop a pregnancy. Women who said they had were asked detailed information about the process they took the last time they attempted to obtain an abortion.

All women who have attempted to have an abortion were asked to indicate when the last experience took place and to give the reasons for wanting to terminate the pregnancy. They were asked to report the first thing they did to terminate the pregnancy and whether the pregnancy was stopped then. Those who did not succeed with the first attempt were asked about the total number of steps they took to end the pregnancy. All women with abortion experience were asked detailed questions about where they went, who they saw, what was done, cost of providing the services and type of health consequences they experienced, if any, for each step they took from the first to the last.

We provide here information on the first step women took to induce an abortion, separately for women who did and did not succeed at their most recent abortion attempt. Then we present the characteristics of the final step women took only for those who succeeded in having an abortion. Those who did not succeed and gave birth were excluded from the analysis of the last step taken.

Among women who succeeded in having an abortion, we investigate the roles of sociodemographic characteristics as determinants of four elements of the abortion seeking process: gestational age of the pregnancy at initiation of the abortion attempt, whether the abortion was initially sought from a non-professional provider, health consequences from the initial step and total number of steps taken to obtain an abortion. We present both the unadjusted associations and, using multivariate logistic regression models, the adjusted associations of socio-demographic characteristics with these features of the abortion seeking process. .

To imply causality, the sociodemographic characteristics should ideally be measured as at (or before) the time of the abortion. Unfortunately, while some of the characteristics included in this analysis were measured as at the time of the abortion, the others were

obtained as at the time of the survey. The latter were nevertheless included either because they were considered to be relatively stable over time or that they have been found to be important factors in other studies. Therefore, some cautions are necessary in interpreting the results as causal.

Age, union status and number of living children were measured as at the time of the abortion. Region, residence and religion were measured as at the time of the survey. However, they are assumed to change little over time so that they are likely to be the same for the respondents between the time of the abortion and the survey. On the other hand, women's educational attainment is likely to be more fluid and may have changed from the time they sought an abortion to the time of the survey, particularly among women with a large time span between the abortion attempt and the survey. However, given that many Nigerian women, and particularly older women, have low levels of education, their educational status may not have changed substantially since the time of their abortion attempt. We also included approval of partner responsible for the pregnancy, year the abortion took place, gestational age (weeks) of the pregnancy and abortion provision by non-professional person in all or some of the models.

After comparing the characteristics of women who have and have not attempted an abortion in their life times, we limit our analysis of the abortion seeking process and its determinants to women who last sought an abortion between 1990 and 2003, in order to focus on the abortion experience in Nigeria in the relatively recent past.

## Results

*Levels of unwanted pregnancy and abortion*: A fairly substantial proportion of the 3,020 women included in the survey (843 or 28%) have had at least a pregnancy that either they did not want at the time or that someone else was opposed to (Table 1, Columns 1 and 2, Row 3). About 58% of this group, representing 16.1% of the total sample, reported that they ever tried to terminate a pregnancy (Table 1, Columns 1 and 2, Row 4)). Eighty-four percent of the women who reported that they ever attempted an abortion, or 13.5% of all women in the sample, did so in the 1990s and early 2000s (1990-2003) (Table 1, Columns 1 and 2, Row 5). Although the level of unwanted pregnancies was similar among women in the northern and southern regions of the country, a larger proportion of women in the south have attempted to induce an abortion (18.2% vs. 14.2% overall and 15% vs. 12% since 1990. (Table 1, Columns 4 through 6). This finding is not unexpected given that motivation for fertility limitation and actual fertility decline are stronger in the South than in the North[13]

*Characteristics of women sampled*: In order to examine the socio-demographic differences between women who have attempted an abortion and those who have not, we compared the two groups of women according to their *current* characteristics. Women who had attempted an abortion in their lifetimes tended to be younger than women who had not sought an abortion at the time of the survey (Table 2). Women with experience of abortion attempt were also more likely to be single and nulliparous, to have at least a secondary school education, to be living in the South, to be Christian and to have ever

used contraception than women who have not attempted an abortion. Interestingly, women in urban areas were equally as likely as women in the urban areas to have sought an abortion. This tends to suggest that under a restrictive abortion law, clandestine abortions take place with or without access to professional abortion services.

*Abortion seeking process: 1990-2003.*

*Timing of initiation of abortion attempt*: Contrary to the general perception that in countries where abortion is illegal, like Nigeria, women who wanted abortion are likely to delay doing something about it, evidence from this study indicates that many Nigerian women tend to take action very early. Almost half of the women who have ever sought an abortion did so the last time by the 6$^{th}$ week of their pregnancy and about 83% had done so by the 12$^{th}$ week (Figure 1). Higher proportions of women in the South tended to seek an abortion earlier in the pregnancy compared to women in the North. For example, 93% of women in the south who sought an abortion did so the last time by the 12$^{th}$ week of pregnancy, whereas only 71% of women in the north had initiated their abortion attempts by this time. A number of reasons could account for this, including higher education, greater autonomy for women, and higher motivation to limit family size in the South compared to the North.

*First step taken to obtain last abortion*: When women's most recent abortion attempts from 1990 to the time of survey were considered, 84% (340) of the 406 women who sought an abortion succeeded in terminating the pregnancy (Table 3, Columns 2 and 3). The remaining 16% of women who attempted an abortion during this time did not succeed and gave birth (Table 3, Columns 4 and 5).

How do the women who succeeded in obtaining the abortion differ from those who did not? And how do women in the south who sought an abortion differ from those in the north who did so? We investigate these important questions by examining elements of women's most recent abortion attempt according to their pregnancy outcome and region of residence. In particular we examine features of the initial step that these groups of women took in an effort to terminate that pregnancy.

More than three-quarters (82.6%) of all women who attempted an abortion initiated the last one before 12 weeks of gestation. However, there is a substantial difference by whether or not women succeeded in terminating the pregnancy. Women who succeeded were more likely to initiate the abortion process earlier than their counterparts who did not. Also, irrespective of whether or not women succeeded in having an abortion, women in the South were more likely to seek an early abortion than their counterparts in the North. Among those who had an abortion, 75.2% in the North and 96.7% in the South initiated the abortion attempts before 12 weeks of gestation. Among women who failed and had a birth, only 51.4% in the North compared to 70% in the South sought the abortion before 12 weeks of gestation.

The most commonly sought abortion providers at the first attempt to obtain an abortion in Nigeria were those at private hospitals and clinics (reported by 43.1% of women). When women were asked who they saw there, about 93% of those who had been to a hospital or

clinic said they saw a doctor (not shown). The second most commonly used providers were chemists (24%).

Among women who did not succeed in terminating the pregnancy, however, the most commonly sought providers at first step differed by region. In the North, these were either traditional healers/native doctors (45.5%) or the women attempting to induce abortions themselves (42.4%). In the South, women were more likely to either seek abortion services from a chemist (47.4%) or try something on their own (36.8%).

Overall, women in the South were more likely to seek abortion from private health facilities compared to those in the North, suggesting that women in the South tended to seek abortion from professional persons more than those in the North.[1]

Forty one percent of women who sought an abortion initially underwent dilation and curettage or vacuum aspiration and 30% ingested a remedy or inserted an object vaginally. Among women who succeeded in terminating the pregnancy, use of dilation and curettage or vacuum aspiration was more common in the South than in the North (60.5% vs. 35.9%), while ingestion of remedy or insertion of objects was more common in the North (13.8% vs. 29.5%). Among women whose abortion attempts failed, more than two-thirds (87.5% in the North and 68% in the South) ingested a remedy or vaginally inserted an object in their effort to induce an abortion. This finding is consistent with the fact that more women in the South than in the North tended to seek abortion from qualified persons or places.

Pain was the most frequently reported abortion complication. About 39%, of the women experienced moderate or severe pain after the first attempt to obtain the abortion. The next most frequently mentioned complication was bleeding (27.1%). Nearly 10% of women experienced moderate or severe fever and/or infection after their initial abortion attempt. As might be expected given the methods they used to induce an abortion, women who did not succeed in aborting their pregnancies were less likely to report excessive bleeding but slightly more likely to report an injury or infection, compared to women who terminated their pregnancies. Surprisingly, women in the south reported more injuries and incidents of fever compared to women in the north.

Nearly 40% of all abortion attempts were undertaken without the knowledge or approval of the man who made the woman pregnant. Irrespective of the outcome of the first attempt to obtain an abortion, women in the South were more likely to receive approval of their partners, and overall only about 25% of women in the south who sought abortions did so without the knowledge or approval of the partners.

Among women who did not succeed in terminating their pregnancies, those in the south were far more likely to pursue additional means of inducing an abortion when their first attempt failed, compared to those in the North. Ultimately 16% of the women who sought an abortion did not succeed and ultimately gave birth.

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[1] Among women who sought abortion at private hospital/clinics, 95% in the South and 90.5% in the North said they saw a doctor.

*Final step taken to obtain last abortion*: The vast majority of all women (872.6% in the South and 73.6% in the North) who succeeded in terminating their pregnancies did so before the 12th week of gestation (Table 4). Nearly half of all women and almost 60% of those living in the South sought services at a private hospital or clinic for the final action that terminated the pregnancy.[2] Dilation and curettage or vacuum aspiration was by far the most common final method used among successfully terminated pregnancies, accounting for 83% of abortions in the South and 45% of abortions in the North. Still, more than 10% of women induced an abortion by ingesting remedies or vaginally inserting an object, and 20% of women in the North did so. Ironically, the experience of both fever/infection and injury was more frequently reported by women in the south, with 20% reporting one of these complications from the final procedure that terminated the pregnancy. A very small proportion (12.1%) of women who successfully terminated their pregnancies and reported complications at the final step of obtaining the abortion received treatment for the complications.

The most common reason given for seeking an abortion was not being married (44.1%), and the second most common reason was that the woman would have to drop out of school if she carried the pregnancy to term (16.8%). There was little difference between the two regions in women's primary motivation for seeking an abortion.

*Relationships between sociodemographic factors and abortion seeking behavior:*

*Bivariate relationships (unadjusted associations)*: Among women who were successful in terminating their pregnancy, younger and single women were more likely than older women and those in a union to initiate an abortion at 12 or more weeks of gestation, seek a non-professional provider, undertake more than 1 procedure or action to terminate the pregnancy and suffer from abortion-related complications (Table 5). Women residing in the north and those affiliated with traditional religions were also most likely to seek an abortion later in gestation, see a non-professional provider or have moderate or severe complications. More educated women were more likely to wait to initiate abortion attempts but less likely to visit non-professional provider or have complications than those with little or no education.

Women who did not inform the partners who made them pregnant or whose partners did not approve of an abortion were more likely to delay initiation of abortion process, see a non-professional provider and experience complications than those whose partners approved of the abortion.

While abortions that occurred in the most recent period before the survey tended to be initiated earlier than those that took place in more distant past, they were surprisingly also the most likely to be performed by a non-professional provider or involve complications. In general, women who initiated abortion attempts at or after the 12th week and those who sought abortion from non-professional providers tended to be more likely to experience

[2] When asked about the person who stopped the pregnancy, 76.9% of these women (86.6% in the South and 64.2% in the North) said it was a doctor or nurse.

abortion complications or undertake more than one attempt before becoming successful with the termination of the pregnancy.

*Multivariate relationships (adjusted associations):* After controlling for other factors, region of residence, religion and the year the abortion occurred emerged as significant predictors of the timing of initiation of abortion attempt (Table 6, Model 1). For example, women who live in the North were ten times as likely as their counterparts in the South to obtain an abortion at 12 or more weeks of gestation. Similarly, women who professed traditional or other religion were about seven times as likely as Muslim women to initiate an abortion after the 11$^{th}$ week. Women who obtained their last abortion between 1990 and 1994 were almost 2.5 times as likely as those who did so in the early 2000s to delay obtaining an abortion.

The use of non-professional abortion providers was found to vary with women's age, religious affiliation, level of education, whether or not their partners approved of the abortion and year of the abortion experience (Table 6, Model 2). Teenage women, those with primary of no education and women whose partners were not informed or disapproved of the abortion were about twice as likely as older women, those with secondary or higher education and women whose partners approved of the abortion to seek the service of non-professional provider. Also, Christians (both Catholics and Protestants) as well as those who in traditional/other religions were at least two times as likely as Muslim women to obtain abortion from non-professional providers. Women who had their last abortion experiences in 2000-2003 were almost two times as likely as their counterparts who obtained their last abortions in the late 1990s to seek abortion from a non-professional person.

Whether or not women who obtained abortions experienced moderate or severe complications was the least dependent on women's socio-demographic characteristics (Table 6, Model 3). When the effects of other variables are controlled for, only two factors, marital status and region of residence, emerged as significant determinants of experience of complications associated with abortion. Women who were never married at the time of the abortion experience were almost twice as likely as those who had been married to experience complications. Similarly, women who live in the North were about 2.5 times as likely as those in the South to experience moderate or severe abortion complications. Surprisingly, longer gestational age of pregnancy and obtaining abortion services from a non-professional person did not increase the odds of abortion complications.

This analysis suggests that the type of provider initially used is probably the most important determinant of the number of steps to obtaining an abortion in Nigeria, among women who successfully terminated their pregnancies. Women who first attempted to obtain abortions from non-professional providers were about 15 times as likely to require and to pursue more than one step to complete the abortion, compared with those who initially saw a professional provider. Also, the odds of making two or more attempts to obtain an abortion was nearly four times as high among women who delayed an abortion until the 12$^{th}$ week of gestation as among those who initiated their abortions earlier.

Marital status at the time of abortion was also a significant predictor of the number of steps women would take to obtain the abortion (Table 6, Model 4). Women who had never married were about 2.5 times as likely as those who had been married to take two or more steps to obtain an abortion. Women who resided in the South and those whose partners approved of the abortion decision were about twice as likely to take two or more steps to obtain an abortion as those who live in the North or those whose partners disapproved or were uninformed of the abortion.

## Discussion

In Nigeria, as in most countries in Sub-Saharan Africa, the magnitude of the impact of unsafe abortion on women's health, family well-being and society resources is yet to be fully appreciated. Findings from a previous national study by AGI and CAUP put the annual number of abortion in the country at 610, 000 or 25 per 1000 women. Other, mostly ad-hoc, studies in Nigeria have documented the debilitating health effects of unsafe abortion on women's health. Nevertheless, policy makers are yet to sufficiently grasp the magnitude of the problem and to allocate adequate resources to promoting the reproductive health of women.[14] The goal of this paper is to contribute to a better understanding of abortion situation in Nigeria by underscoring the process women take to obtain abortion. The importance of the knowledge of this process and its implications cannot be overstated given that abortion is illegal in the country. Under Nigerian law it is a crime to perform or obtain an abortion except to save a woman's life; in addition, religious doctrines prohibit abortion and social norms oppose the practice. Therefore, many abortion decisions and procurement are treated with secrecy, making women to be prone to seeking the procedure under unsafe conditions.

The negative impact of unsafe abortion is directly related to the conditions under the abortion takes place and understanding the circumstances surrounding abortion procedure can be an effective tool for safeguarding against the morbidity and mortality associated with unsafe abortion in Nigeria. This survey was conducted in eight states across all six geopolitical zones and among diverse groups of women with a view toward producing findings that are likely to reflect experiences of women across the country. It is hoped that policy makers and program planners at federal, state and district levels throughout the country will find the results useful to their efforts to promote the health of women in their areas of jurisdiction.

Findings from the paper show that 16% of women of reproductive age in Nigeria reported that they have attempted an abortion. About 13% of all interviewed women or 84% of those who have attempted to obtain an abortion indicated that they successfully induced their last abortion. Given that abortion is restricted by law, it is likely that some women did not report their abortion experiences and that the above figures are underestimates of the level of induced abortion experience among women in the country. Nevertheless, the findings are comparable to those from another community-based study conducted in 1995-1996, in which 20% of women reported that they had attempted an abortion and 11% successfully terminated a pregnancy.[15]

This paper corroborates other studies which show that abortion is more prevalent among younger than older women and the primary reason why these women seek abortions in the recent past is to avoid early and/or premarital births. Sixty percent of women cited either their single status or the fact that they were still in school as the primary reason for seeking an abortion. Some hospital based studies show that up to 80% of patients admitted for complications associated with abortions were adolescents.[16] Evidence from a recent study shows that premarital fertility remains high in Nigeria.[17] However, young people, including women are increasingly deciding to delay marriage and childbearing and to obtain more education and better job prospects. As this trend increases, the incidence of abortion among young women is likely to rise unless their use of contraception increases. A study based on focus group discussions with adolescent women noted that young Nigerian women resort to abortion to prevent unwanted births because they perceive the adverse effects of modern contraceptives on fertility to be persistent, while they regarded abortion as an immediate solution with little long term impact.[18] This suggests that young women need better education to help them understand the benefit of contraception and to address any misconception about the methods. With the spread of HIV/AIDS in countries of Sub-Saharan Africa, including Nigeria, efforts to promote the sexual and reproductive health of adolescent women should be a high priority given their vulnerability to unwanted pregnancy and STIs.

Contrary to general perception, women who obtain abortions in Nigeria tend to go about it fairly early. Most of women in this group sought abortions before the 12$^{th}$ week of gestation. However, while taking action early in the pregnancy may reduce the risk of complications associated with unsafe abortions, a high proportion of Nigerian women are seeking abortions from untrained providers. Just over half of women who attempted an abortion used an untrained provider, and close to half went to a hospital or clinic. The proportions seeking abortions from trained and untrained providers were similar among women who successfully terminated their pregnancies. However, those who went to an untrained provider were far more likely to experience a failed abortion attempt and need to take further actions to end their pregnancies.

About 40% initiated their abortion attempt by ingesting a remedy, receiving an injection, or inserting an object vaginally. Among women who successfully terminated their pregnancies, 22% used one of these methods, and 78% underwent a D&C or vacuum aspiration or took mifespristone or other tablets. Access is an important issue in this respect. There is need for better information and education, especially among women with little formal education, to acquaint them with the potential risk of seeking abortions from untrained providers.

Overall, 14% of women who successfully induced an abortion had to attempt the abortion more than once before finally succeeding. Given that abortion is punishable under the Nigerian criminal law and given that most abortions are performed clandestinely, one may be tempted to conclude that most women are doing relatively well if they can terminate unwanted pregnancy in one attempt. However, associated with this “success” is high incidence of abortion complications suggesting that many of those one-time attempts were unsafe. This may have far reaching implications in terms of costs to the

woman and her family and the society of treating postabortion complications and opportunity cost, including lost of productivity.[3]

Forty percent of women who had an abortion experienced at least one complication, and 12% sought treatment for complications from their abortion procedure. The nature and severity of consequences of unsafe abortion can vary widely depending on the circumstances around the abortion procedure. A 1998 study of 840 women admitted for abortion complications in Ibadan reported multiple complications, including sepsis (86%), haemorrhage (35%), uterine perforations (16%), lower genital tract injury (10%), renal failure (0.4%), coma (0.4%) and embolism (0.2%).[19] The experience of complications and the use of health care facilities to treat them represent some of the burdens of unsafe abortions on the health care resources in Nigeria.

The findings of this study show that many Nigerian women are taking significant risks to terminate unwanted pregnancies, judging from the process they take to obtain abortions. As a result, many women have died as a result of unsafe abortion while others have suffered serious health consequences. Unless the issue is addressed, this trend is likely to continue. Reducing the incidence of unwanted pregnancy and unsafe abortion can significantly impact the reproductive health of women in Nigeria. Expanding access to contraceptive services and information represents one important step in this direction. In cases where abortion is allowed under the law, access to safe and effective services is of prime importance. This can be achieved in part by training providers in safe and effective abortion techniques. While the effort to reduce unwanted pregnancy and abortion should be intensified as a matter of priority, there is an equally urgent need to equip hospitals with the ability to provide adequate postabortion cares for women who need them. Further research aimed at providing empirical evidence on the conditions, health consequences and the social and economic burdens of unsafe abortions are needed to further support the efforts of policy makers and program planners to improve conditions for women in Nigeria.

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**Table 1. Distribution of women who have experienced unwanted pregnancies and who have attempted an abortion, by region.**

| | All women | | Region: North | | Region: South | | |
|---|---|---|---|---|---|---|---|
| | # | (%) | # | (%) | # | (%) | P-value |
| Was pregnant, did not want to be | 802 | (26.6) | 431 | (26.8) | 371 | (26.2) | 0.71 |
| Was pregnant, others did not want her to be* | 41 | (1.4) | 18 | (1.1) | 23 | (1.6) | 0.23 |
| Total | 843 | (28.0) | 449 | (27.9) | 394 | (27.8) | |
| Attempted an abortion | 485 | (16.1) | 228 | (14.2) | 258 | (18.2) | 0.003 |
| Attempted an abortion 1990-2003 | 407 | (13.5) | 193 | (12.0) | 214 | (15.1) | 0.012 |

*Asked only of women who did not have an unwanted pregnancy.

**Table 2. Characteristics of ever-pregnant women who did and did not seek induced abortions in Nigeria.** *(n=2299)*

| | With abortion history | | No abortion history | | P-value |
|---|---|---|---|---|---|
| | % | # | % | # | |
| Age | | | | | |
| < 20 | 15.5% | (75) | 7.6% | (138) | |
| 20-24 | 21.4 | (104) | 17.6 | (318) | |
| 25-29 | 19.0 | (92) | 22.5 | (406) | |
| 30-34 | 19.6 | (95) | 19.7 | (356) | |
| 35-39 | 12.6 | (61) | 15.0 | (270) | |
| ≥ 40 | 12.0 | (58) | 17.6 | (317) | |
| Parity | | | | | |
| nulliparous | 38.8 | (188) | 7.1 | (128) | |
| 1-2 live birth | 25.4 | (123) | 34.8 | (632) | |
| ≥ 3 live births | 35.9 | (174) | 58.1 | (1054) | <.0001 |
| Educational status | | | | | |
| none | 11.0 | (53) | 25.0 | (452) | |
| some or all primary school | 18.3 | (88) | 29.8 | (539) | |
| some or all secondary school | 49.8 | (240) | 32.8 | (594) | |
| some or all university | 21.0 | (101) | 12.4 | (224) | <.0001 |
| Residence | | | | | |
| urban | 48.3 | (235) | 50.2 | (910) | |
| rural | 51.7 | (250) | 49.8 | (904) | 0.50 |
| Region | | | | | |
| north | 47.0 | (228) | 57.9 | (1050) | |
| south | 53.0 | (257) | 42.1 | (764) | <.0001 |
| Religion | | | | | |
| catholic | 22.9 | (111) | 14.6 | (264) | |
| protestant/spiritual/pentacostal | 45.8 | (222) | 37.3 | (675) | |
| muslim | 21.2 | (103) | 43.8 | (792) | |
| traditional/other | 10.1 | (49) | 4.3 | (77) | <.0001 |
| Marital status | | | | | |
| single | 39.0 | (189) | 6.2 | (113) | |
| married | 55.1 | (267) | 86.9 | (1577) | |
| divorced/separated/widowed | 6.0 | (29) | 6.8 | (124) | <.0001 |
| Ever used contraception | | | | | |
| yes | 59.1 | (285) | 31.2 | (565) | |
| no | 40.9 | (197) | 68.8 | (1246) | <.0001 |
| Total | 100.0% | (485) | 100.0% | (1814) | |

**Chart 1. Cumulative frequency of gestational age at initiation of abortion attempt by region, 1990-2003**

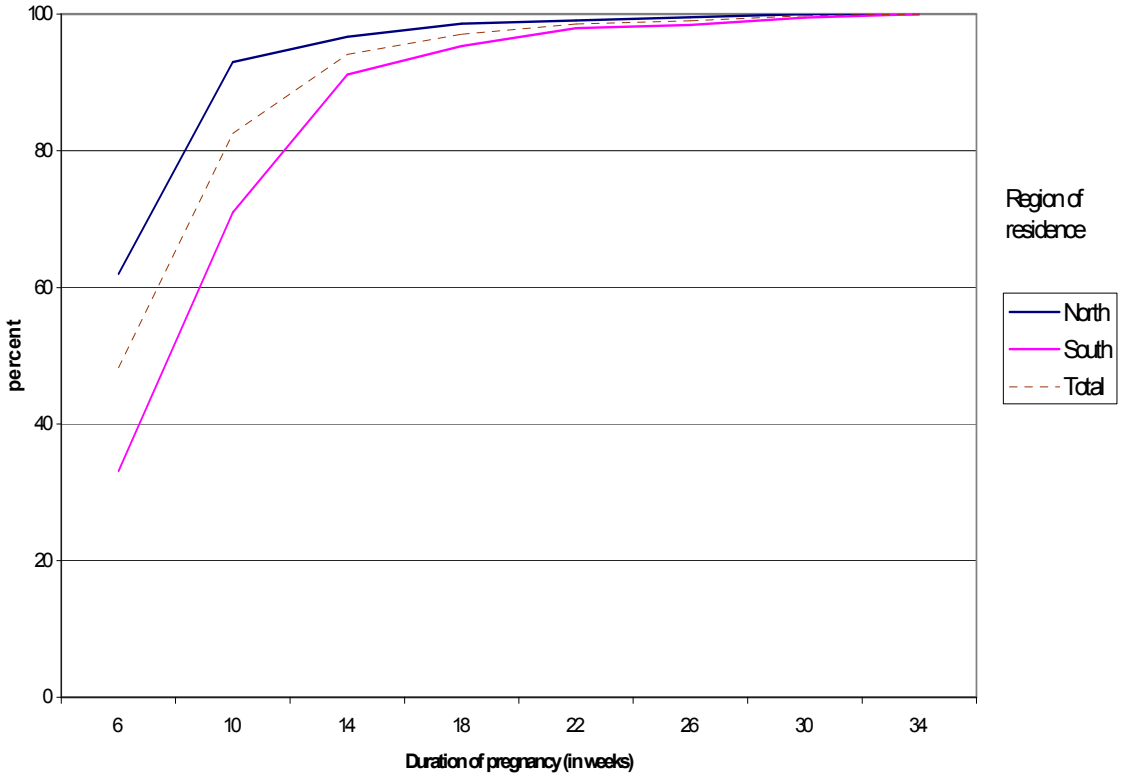

**Table 3. Percentage distribution of women who ever attempted an abortion according to characteristics of the first step taken, by outcome of the pregnancy and region, 1990-2003.**

| | All women (n=406) | Pregnancy ended in abortion | | | Pregnancy ended with live birth | | |
|---|---|---|---|---|---|---|---|
| | | North (n=157) | South (n=183) | | North (n=35) | South (n=30) | |
| | (%) | (%) | (%) | p-value | (%) | (%) | p-value |
| Gestational age at 1st abortion attempt (n=406) | | | | | | | |
| < 12 weeks | 82.5 | 75.2 | 96.7 | | 51.4 | 70.0 | |
| ≥ 12 weeks | 17.5 | 24.8 | 3.3 | <.0001 | 48.6 | 30.0 | 0.13 |
| Provider of abortion service (n=383) | | | | | | | |
| private hospital/clinic | 43.1 | 38.2 | 59.5 | | 0.0 | 10.5 | |
| public hospital/clinic | 5.0 | 6.4 | 4.0 | | 6.1 | 0.0 | |
| chemist | 24.0 | 22.9 | 26.0 | | 6.1 | 47.4 | |
| native doctor/traditional healer | 12.8 | 16.6 | 3.5 | | 45.5 | 5.3 | |
| self (at home) | 15.1 | 15.9 | 6.9 | <.0001 | 42.4 | 36.8 | <.0001 |
| Action taken (n=381) | | | | | | | |
| d&c/vacuum aspiration | 41.5 | 35.9 | 60.5 | | 0.0 | 4.0 | |
| mifepristone/other tablets | 16.8 | 16.7 | 19.2 | | 3.1 | 20.0 | |
| injection | 11.5 | 17.9 | 6.6 | | 9.4 | 8.0 | |
| ingested remedy or inserted object | 30.2 | 29.5 | 13.8 | <.0001 | 87.5 | 68.0 | 0.12 |
| Complications from procedure** | | | | | | | |
| bleeding (n=339) | 27.1 | 31.2 | 29.0 | 0.70 | 9.7 | 5.3 | 0.58 |
| pain (n=338) | 39.3 | 48.0 | 31.1 | 0.004 | 29.0 | 42.1 | 0.34 |
| injury (n=337) | 2.4 | 0.0 | 4.5 | 0.008 | 3.2 | 5.3 | 0.72 |
| fever (n=335) | 7.5 | 3.3 | 12.0 | 0.005 | 3.3 | 15.8 | 0.12 |
| Partner/husband approved (n=376) | | | | | | | |
| yes | 60.6 | 46.8 | 77.1 | | 34.5 | 63.6 | |
| no or did not know | 39.4 | 53.2 | 22.9 | <.0001 | 65.5 | 36.4 | 0.04 |
| Number of steps taken in abortion attempt (n=404) | | | | | | | |
| 1 | 85.1 | 88.5 | 84.1 | | 97.1 | 58.6 | |
| 2 or more | 14.9 | 11.5 | 15.9 | 0.24 | 2.9 | 41.4 | <.0001 |

** A woman may report more than one complication. The variable does not sum to 100%.

**Table 4. Percentage distribution of women who had induced abortions according to characteristics of the final step taken to induce abortion, by region, 1990-2003.**

| | All women (n=340) (%) | North (n=157) (%) | South (n=183) (%) | p-value |
|---|---|---|---|---|
| Gestational age at final abortion attempt (n=327) | | | | |
| < 12 weeks | 81.0 | 73.6 | 87.2 | |
| ≥ 12 weeks | 19.0 | 26.4 | 12.8 | 0.002 |
| Provider of abortion service (n=282) | | | | |
| private hospital/clinic | 47.5 | 38.7 | 58.3 | |
| public hospital/clinic | 5.0 | 6.5 | 3.1 | |
| chemist | 25.2 | 23.2 | 27.6 | |
| native doctor/traditional healer | 9.2 | 15.5 | 1.6 | |
| self (at home) | 13.1 | 16.1 | 9.4 | <.0001 |
| Action taken (n=310) | | | | |
| d&c/vacuum aspiration | 65.6 | 45.1 | 82.7 | |
| mifepristone/other tablets | 12.9 | 16.2 | 10.1 | |
| injection | 10.0 | 18.3 | 3.0 | |
| ingested remedy or inserted object | 11.6 | 20.4 | 4.2 | <.0001 |
| Complications from procedure** | | | | |
| bleeding (n=243) | 30.5 | 29.9 | 31.2 | 0.82 |
| pain (n=241) | 39.0 | 47.3 | 29.1 | 0.004 |
| injury (n=240) | 2.9 | 0.0 | 6.4 | 0.003 |
| fever (n=239) | 9.2 | 5.3 | 13.9 | 0.023 |
| Received treatment for complications (n=300) | | | | |
| yes | 12.1 | 15.9 | 9.3 | |
| no | 87.9 | 84.1 | 90.7 | 0.12 |
| Primary reason for abortion (n=340) | | | | |
| not married | 44.1 | 43.9 | 44.3 | |
| still in school | 16.8 | 14.6 | 18.6 | |
| to space births | 12.9 | 17.2 | 9.3 | |
| to stop childbearing | 5.0 | 3.8 | 6.0 | |
| partner did not want pregnancy/left | 8.8 | 7.6 | 9.8 | |
| other | 12.4 | 12.7 | 12.0 | 0.29 |

** A woman may report more than one complication. The variable does not sum to 100%.

**Table 5. Percent of women who were at 12 or more week gestation, saw a non-professional provider, or suffered moderate or severe complications at initial abortion attempt, or who made two or more attempts to end the pregnancy, by sociodemographic characteristics, among women who had an abortion, 1990-2003.**

| Sociodemographic characteristics | % of women who were at 12 or more weeks of gestation | % of women who saw a non-professional provider | % of women who suffered from moderate or severe complications | % of women who made 2 or more attempts to end pregnancy |
|---|---|---|---|---|
| Age at time of attempt | | | | |
| <20 | 18 | 64 | 52 | 23 |
| 20 or more | 11 | 43 | 48 | 21 |
| Union status at time of attempt | | | | |
| In union | 10 | 40 | 42 | 14 |
| Not in union | 17 | 60 | 56 | 29 |
| Residence | | | | |
| Urban | 13 | 46 | 34 | 25 |
| Rural | 14 | 54 | 44 | 18 |
| Region | | | | |
| South | 3 | 44 | 40 | 24 |
| North | 25 | 56 | 60 | 19 |
| Religion | | | | |
| Catholic | 6 | 58 | 46 | 18 |
| Protestants | 11 | 46 | 48 | 27 |
| Muslim | 12 | 40 | 49 | 13 |
| Traditional/other | 41 | 70 | 60 | 19 |
| Parity at time of attempt | | | | |
| '0 | 14 | 54 | 50 | 25 |
| 1-3 | 10 | 37 | 45 | 11 |
| 4+ | 15 | 50 | 53 | 23 |
| Educational status | | | | |
| < Secondary | 15 | 60 | 52 | 19 |
| Secondary or higher | 13 | 47 | 48 | 22 |
| Partner's approval of attempt | | | | |
| Approved | 12 | 43 | 47 | 22 |
| Disapproved/was not informed | 16 | 63 | 52 | 20 |
| Year of the attempt | | | | |
| 1990-1994 | 24 | 44 | 42 | 22 |
| 1995-1999 | 7 | 39 | 43 | 16 |
| 2000-2003 | 12 | 57 | 54 | 24 |
| Gestation age of pregnancy at first attempt | | | | |
| <10 weeks | | 49 | 46 | 19 |
| 10 weeks or more | | 58 | 67 | 36 |
| Saw non-professional provider at first attempt | | | | |
| No | | | 46 | 5 |
| Yes | | | 52 | 38 |
| Number of cases | 335 | 335 | 335 | 335 |

**Table 6. Odds ratios of the associations of sociodemographic characteristics with gestational age, type of abortion provider and health consequence at initial abortion attempt, and number of steps taken to end pregnancy, 1990-2003.†**

| Sociodemographic characteristics | Model 1<br>12 or more weeks of gestation | Model 2<br>Non-professional provider at first attempt | Model 3<br>Experience of moderate or severe complications | Model 4<br>2 or more attempts to end pregnancy |
|---|---|---|---|---|
| Age at time of attempt | | | | |
| <20 | 1.49 | 1.92** | 0.92 | 0.71 |
| 20 or older | R.C | R.C. | R.C. | R.C. |
| Union status at time of attempt | | | | |
| In union | R.C. | R.C. | R.C | R.C. |
| Not in union | 1.62 | 1.55 | 1.825** | 2.50** |
| Residence | | | | |
| Urban | R.C. | R.C. | R.C | R.C. |
| Rural | 0.69 | 0.84 | 1.34 | 0.79 |
| Region | | | | |
| South | R.C. | R.C. | R.C. | R.C. |
| North | 10.11*** | 1.36 | 2.48*** | 0.50* |
| Religion | | | | |
| Catholic | 0.83 | 3.63*** | 1.26 | 0.64 |
| Protestants | 2.16 | 2.28** | 1.59 | 1.45 |
| Muslim | R.C. | R.C. | R.C. | R.C. |
| Traditional/other | 7.12*** | 3.89*** | 1.06 | 0.54 |
| Number of living children at time of attempt | | | | |
| '0 | R.C. | R.C. | R.C. | R.C. |
| 1-3 | 1.04 | 0.75 | 1.14 | 0.54 |
| 4+ | 1.76 | 1.15 | 1.56 | 1.65 |
| Educational status | | | | |
| < Secondary | 0.78 | 2.03** | 1.02 | 0.94 |
| Secondary or higher | R.C | R.C. | R.C. | R.C. |
| Partner's approval of attempt | | | | |
| Approved | R.C. | R.C. | R.C. | R.C. |
| Disapproved/was not informed | 0.69 | 1.85** | 0.96 | 0.55* |
| Year of the attempt | | | | |
| 1990-1994 | 2.42* | 0.66 | 0.68 | 1.28 |
| 1995-1999 | 0.68 | 0.55** | 0.90 | 1.06 |
| 2000-2003 | R.C. | R.C. | R.C. | R.C. |
| Gestation age of pregnancy at first attempt | | | | |
| <12 weeks | | R.C. | R.C. | R.C. |
| 12 weeks or more | | 0.89 | 1.61 | 3.89*** |
| Saw non-professional provider at first attempt | | | | |
| No | | | R.C. | R.C |
| Yes | | | 0.97 | 15.63*** |
| Number of cases | 335 | 335 | 335 | 335 |

† Odds ratios in each column are based on logistic regression models controlling for all factors in Column 1.

R.C. = Reference Category, *p<=0.1 **p<=.05 ***p<=.01