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■ Case Report

Magnitude and Risk Factors for Induced Abortions Among Female Undergraduates

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ABSTRACT

Introduction: Induced abortion is illegal in Nigeria except when performed to save a woman's life. However, pregnancy terminations are quite common, and because they are often performed clandestinely or by unskilled providers, most are unsafe. **Aims:** To ascertain the prevalence and associated risk factors for induced abortion among University female students. **Methods and Material:** The study was a cross-sectional descriptive study conducted at the University of Ibadan, Nigeria from September to November 2017. The study instrument was a self-administered semi-structured questionnaire that was developed by the researcher. The raw data from the field was screened for inconsistencies. Analysis of data was by computer using statistical package for social sciences (SPSS) version 23. **Results:** This study revealed a prevalence of 17.3% for female students who had history of an induced abortion. We found that 60.9% of the female students sampled were sexually active however, only 33.5% were current users of contraceptives. The study found that 64.2% of respondents felt stigma associated with an unwanted pregnancy influenced their choice for an induced abortion, and 85.5% of respondents choice were influenced by fear of becoming a mother whilst still in school. **Conclusions:** We found there was adequate knowledge of abortions and their complications, however the sexually active students didn't utilize contraceptive methods with a significant percentage resulting in unintended pregnancies for which they had abortions. **Key Messages:** The findings from this study show that there is poor contraceptive usage among female undergraduates despite majority being sexually active. This would lead to increasing numbers of unwanted pregnancies and consequently unsafe abortions.

Keywords: Abortion, contraception, female university students, unsafe abortions, risk factors.

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Introduction

Induced abortion is a procedure of medical or surgical termination of pregnancy before the time of fetal viability, which in our environment is 28 weeks.^{1,2} It is classified into Therapeutic and Elective or voluntarily abortions.¹

Unsafe abortion which is the termination of an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking minimal medical standards or both.³ Unsafe abortion has continued to be a huge burden to women's health and reproductive lives especially in nations where it is illegal.^{4,7}

Induced abortion is illegal in Nigeria except when performed to save a woman's life. Both the penal code, which is generally applied in the country's northern states, and the criminal code, which generally applies in the southern states, allow this exception, and both regions specify similar criminal penalties for noncompliance.^{5,8-11} Yet pregnancy terminations are quite common, and because they are often performed clandestinely or by unskilled providers, most are unsafe.^{6,12-14} Induced abortions is often associated with maternal morbidities, which in extreme cases lead to maternal mortality. The long-term consequences of induced abortions include long term organ damage and sepsis that may lead to infertility or chronic disabilities.^{2,15-17}

Female university students are a high risk group for induced abortions due to some factors including the fact that they fall into the age range for first onset of intercourse for which the median age at first intercourse among women in Nigeria is 17.6 years.^{7,18-20} Additionally, young women are less likely to have knowledge about a contraceptive method.²³⁻²⁷

The aim of this study was to address the knowledge gap on the prevalence and associated factors of induced abortion among university female students. The specific objectives were, to determine the prevalence, assess the knowledge of abortions among female students, assess the attitude of the female students towards abortions and identify the risk factors for induced abortions among female students.

Subjects and Methods

- The Study Setting

The study area was Ibadan, the state capital of Oyo state, Nigeria. Ibadan is located in south western Nigeria in the south-eastern part of Oyo state at about 119 kilometers northeast of Lagos and 120 kilometres east of the Nigerian international border with the republic of Benin. The city covers a total area of 3,080 kilometres, the largest in Nigeria. The study site was the university of Ibadan, a tertiary institution in Ibadan, Oyo State. There are 10 faculties: Medicine, Arts, Science, Agriculture and Forestry, Social Sciences, Education, Veterinary Medicine, Technology, Law and Pharmacy. The University has residential and sports facilities for staff and students on campus. The University has 10 halls of residence, with three of them female halls of residence, the female halls of residence include Queen Elizabeth II hall, Queen Idia hall and Obafemi Awolowo Hall.

- The Study Population

All consenting female students in Queen Elizabeth, Queen Idia and Obafemi Awolowo halls of the University of Ibadan.

- Exclusion Criteria

1. Exclusion Criteria are postgraduate female students and students not currently residing in the halls of residence.
2. Non-consenting students.

- The Study Design

The study employed a cross-sectional descriptive study.

- Sample size determination

Sample size was determined using the Leslie Kish formula.²⁸

$$n = \frac{Z^2 pq}{d^2}$$

Using a prevalence of 12.4% obtained from a similar study in Nnamdi Azikwe

University, Anambra,²¹ and attrition rate of 10% the sample size was 184 clients.

- Recruitment of participants

Participants were appropriately educated about the study. All consenting students who met the inclusion criteria were recruited for the study.

- Sampling technique

A multistage random sampling technique was used. Simple random sampling was used to determine the room numbers in the halls of residence that will be included in the study and subsequently, simple random sampling was used to determine the bed numbers in each room and the occupant of that bed-space. Only students who satisfied the inclusion criteria were recruited.

- Instrument of data collection

The instrument was pretested in a tertiary institution. Following written informed consent, a self-administered, semi structured questionnaire was used to obtain information regarding participants' demography, knowledge, attitude, practice of abortion and risk factors for abortions. Data was collected from September to November 2017.

- Data analysis

The raw data from the field was screened for inconsistencies. Questions not answered by respondents were labelled missing and recorded as such in corresponding tables. Analysis of data was by computer using statistical package for social sciences (SPSS) version 23. Stepwise multivariate analysis was used in analysis of the data. Chi square test was used to determine the relationship between some categorical variables. Significant level was set at $p < 0.05$.

- Ethical considerations

Ethical approval was obtained from the O.L.A catholic Hospital ethical review committee. The appropriate authorities in the University were informed and permission was obtained to administer questionnaires. Respondents were also duly counselled on confidentiality of information provided with a restricted number of people with access to their information and use of only their signature on the questionnaire, also that the information provided would help give a better understanding of issues concerning induced abortions among youths and the respondents were informed on voluntary participation and a written consent form was given to the respondents.

Table 1: Sociodemographic Characteristics of the Participants

Age	Number	Percentage
16-18	18	10.1
19-20	63	35.2
21-24	80	44.7
25-29	11	6.1
30 and Above	3	1.7
Missing	4	2.2
TOTAL	179	100
Year of Study		
1st year	114	63.7
2nd year	23	12.8
3rd year	29	16.2
4th year	9	5.0
5th year	4	2.2
TOTAL	179	100.0

Definition of Abortion		
Spontaneous loss of pregnancy	12	6.7
Induced termination of pregnancy	161	89.9
Prevention of pregnancy	4	2.2
Missing	2	1.2
Total	179	100.0
Source of Information on Abortion		
Friends	50	27.9
Parents	17	9.5
Media	39	21.8
Seminars and lectures	60	33.5
Newspapers	7	3.9
Others	1	0.6
Missing	5	2.8
Total	179	100.0
Definition of An Unsafe Abortion		
Abortion done by a skilled person	8	4.5
Abortion by unskilled	112	62.6
Abortion done illegally	52	29.0
Missing	7	3.9
Total	179	100.0
Knowledge of Morbidity and Mortality from Unsafe Abortions		
Yes	151	84.4
No	4	2.2
Don't know	24	13.4
Total	179	100.0
Complications of Abortions		
Bleeding	57	31.8
Infertility in the future	62	34.6
Infection	105	58.7
Uterine perforation	76	42.5
Death	50	27.9

Table 1 shows the socio-demographic characteristics of the students. A total of 184 students who met the inclusion criteria were approached with 179 consenting to be studied, the response rate was 97.3%. Majority of the respondents 80 (44.7%) were between the age 21-

24. Majority of the students 114(63.7%) were in their 1st year of study, 29(16.2%) were in their 3rd year, 23(12.8%) were in their 2nd year, 9(5.0%) and 4(2.2%) in their 4th and 5th year respectively. Majority, 161 (89.9%) had good knowledge of what an abortion was, 60 (33.5%) had their source

of knowledge of abortions from seminars and lectures and 50 (27.9%) got the information from friends. Majority, 112 (62.6%) knew what an unsafe abortion was, 151 (84.4%) knew there was

morbidity and mortality associated with an unsafe abortion, with majority 105 (58.7%) knowing infection as a complication.

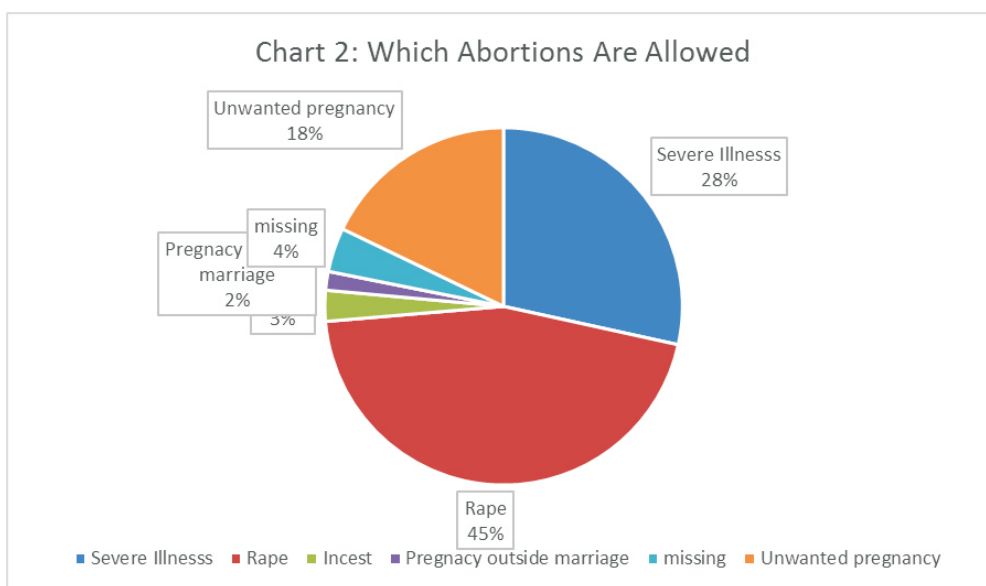


Figure 1 shows the knowledge regarding legality of abortions in Nigeria, Majority 142(77.1%) knew that abortions are illegal in Nigeria. Figure 2 shows participants knowledge of situations for which abortions are allowed in

Nigeria. Majority 84(45.6%)responded that abortions was permitted in cases of rape while 52(28.2%) said it was permitted in severe maternal illness.

Table 2 : Knowledge of Methods of Abortions and Safe Places to Perform an Abortion

Safest Place to Perform an Abortion	Number	Percentage
A doctor in a hospital	137	76.5
A nurse	8	4.5
A chemist	2	1.1
A pharmacist	2	1.1
Don't know	30	16.8
Total	179	100.0
Method of Abortion Known		
Drugs	105	58.7
Dilatation and curettage	39	21.8
Manual vacuum aspiration	13	7.3
Don't know	22	12.3
Total	179	100
Type of Abortifacient Known		
Misoprostol	22	12.3
Postinor	50	27.9
Gin +lime	13	7.3
Local herbs	8	4.5
Tetracycline + hot 7up	14	7.8
Don't know	72	40.3
Total	179	100
Safest Method of Abortions		
Drugs	49	27.4
Dilatation and curettage	65	36.3
Manual vacuum aspiration	27	15.1
Don't know	38	21.3
Total	179	100

Table 2 shows knowledge of methods for abortions and safest place to have an abortion. Majority (76.5%) said a doctor in a hospital was the safest place to have an abortion while only 1.1% each said it was at a chemist or pharmacy. Majority, 58.7% knew drugs as a method of abortions. 40.3

didn't know any type of abortifacient while 27.9% said postinor was an abortifacient, 36.3% said dilatation and curettage was the safest method while only 15.1% said manual vacuum aspiration was the safest method.

Table 3: Perceptions regarding induced abortions

At risk of an unwanted pregnancy	Number	Percentage
Yes	66	36.9
No	106	59.2
Missing	7	4
Total	179	100
Who most influences a female to get an abortion		
Boyfriend	103	57.5
Female friends	36	20.1
Parents	8	4.5
Self	28	15.6
Missing	4	2.3
Total	179	100
Are there stigma associated with an unwanted pregnancy		
Yes	115	64.2
No	46	25.7
Missing	18	10.1
Total	179	100
Does fear of becoming a mother in school influence desire for abortions		
Yes	153	85.5
No	18	10.1
Missing	8	4.5
Total	179	100

Table 3 shows the magnitude and risk factors for induced abortions. Majority 59.2 said they were not at risk of an unwanted pregnancy, 57.5% said a boyfriend most influences a female to get an abortion, while 20.1% said their female friends

influenced the most. 64.2% said there was a stigma associated with an unwanted pregnancy and 85.5% agreed that fear of becoming a mother in school influences desire for abortions.

Table 4 Practice of induced abortions and possible risk factors

Are u sexually active	Number	Percentage
Yes	109	60.9
No	67	37.4
Missing	3	1.7
Total	179	100

Are you aware of contraceptives	Number	Percentage
Yes	130	72.6
No	44	24.6
Missing	5	2.8
Total	179	100
Use of contraceptive		
Yes	60	33.5
No	114	63.7
Missing	5	2.8
Total	179	100
Type of contraceptive used		
Pills	14	7.8
Injectables	2	1.1
Condoms	32	17.9
IUCD	2	1.1
Withdrawal	7	3.9
Calender	3	1.7
None	114	63.7
Missing	5	2.8
Total	179	100
Have you ever been pregnant		
Yes	39	21.8
No	135	75.4
Missing	5	2.8
Total	179	100
Outcome of pregnancy		
Carried to term	6	3.4
Induced abortion	31	17.3
Spontaneous miscarriage	2	1.1
None	138	77.1
Missing	2	1.1
Total	179	100
If induced abortions how many times?		
1	22	71
2	5	16.1
3	2	6.5
4 and more	2	6.5
Total	31	100

Where was it done	Number	Percentage
Hospital	18	58.0
Chemist	4	12.9
Home	8	25.8
Others	1	3.3
Total	31	100

Who performed the abortion	Number	Percentage
A trained doctor	18	58.0
A trained nurse	6	19.4
Pharmacist	0	0.0
Untrained person or chemist	4	12.9
Self	3	9.7
Total	31	100

Table 4 also shows magnitude and risk factors for abortions. Majority 60.9% were sexually active, 72.6% were aware of contraceptives while most of them 63.7% were not using any contraceptive, 17.9% used condoms. 21.8% of the students had

been pregnant, with 17.3% of the students having had an abortion. Of those who had an abortion, 71% had an abortion once, and majority 58% had the abortion in a hospital by a trained doctor.

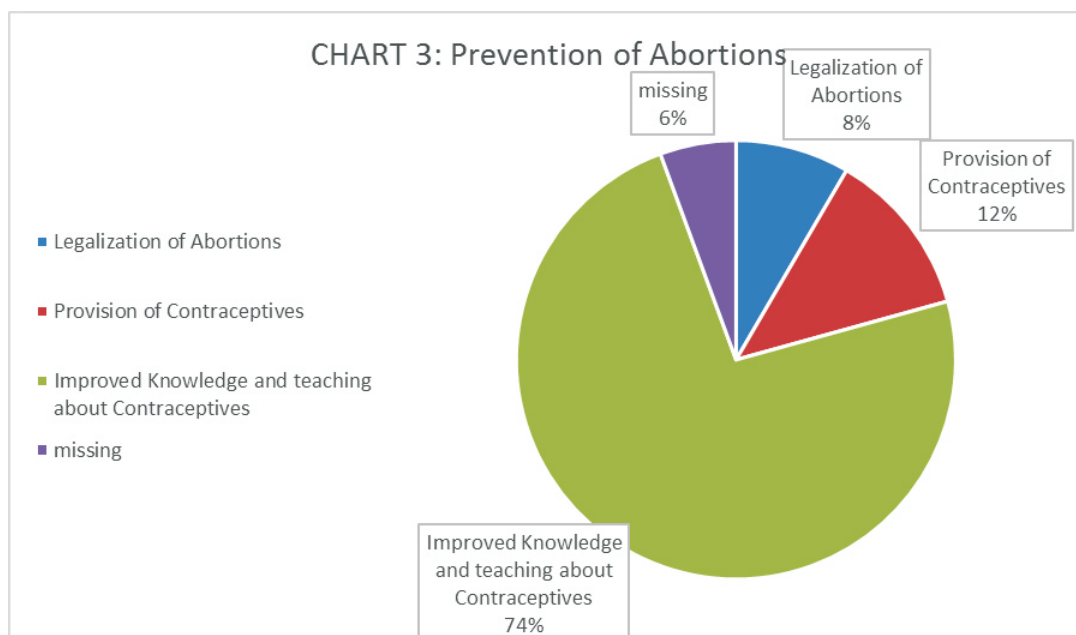


Figure 3 shows suggested methods of prevention of abortions. Majority 74% said abortions could be prevented by improved knowledge and teachings about contraceptives.

Table 5 :Number of students that had been pregnant according to use of contraceptives

Use of contraceptives	Number of students that had been pregnant (%)	Percentage
Yes	27(69.2)	$\chi^2 = 27.026$ df= 3
No	12(30.8)	p=0.000

Table 5 shows the statistical correlation between use of contraceptives and students who had been pregnant. There was a statistically significant relationship between the students who had been pregnant and use of contraceptives, with $p < 0.05$. Post-hoc tests using an adjusted Z score found the area of significance for the number of sexual partners to be among those who did not use contraceptives and those who had been pregnant.

Discussion

This study revealed a prevalence of 17.3% for female students who had history of an induced abortion. It was similar to the prevalence of 17.5% by Arowojolu et al among Nigerian undergraduates,²⁹ but was higher than the prevalence of 5.9% in Wachamo university, southern Ethiopia,²² and slightly lower than 20.2% found by Okereke in Owerri.⁴ The variations in the values may be due to the geographical location and cultural differences. The study found that 60.9% of the female students sampled were sexually active, this is close to the value of 57.2% found by Okereke in Owerri, Nigeria³⁰. It was higher than the 23.7% found by Gelaye et al.² It was also similar to a study done in Kaduna, Nigeria that found the sexual prevalence rate of 62.4%.³¹ This high level may be due to early sexual debut as was reported by Arowojolu et al.²⁹ Although the knowledge of contraceptives was good among majority of participants, only 33.5% were current users of contraceptives, this may be due to hostility, stigmatization associated with getting contraceptives for youths and the unavailability of contraception among undergraduate students, Arowojolu et al also found that only 34.2% of Nigerian Undergraduates studied were

current contraceptive users and in their study some contraceptive providers reportedly told off young contraceptive seekers.²⁹ This is a serious gap in the usage of contraceptives in Nigeria. These findings show that despite majority of the students being sexually active, only a small proportion were using contraception, and this would inevitably lead to unwanted pregnancies and unsafe abortions. It is therefore integral to tackle the issues of stigmatization associated with getting contraceptives and make contraceptives widely and easily available to undergraduates so as to reduce the unmet need.

Majority of the participants in this study had a good knowledge about abortions, complications of abortions and contraceptives. This may be as a result of the study being carried out in an academic environment where sexuality clinics are abound, Arowojolu et al also found the same thing among Nigerian undergraduates in Universities in South Western Nigeria in a similar setting. This enforces the unmet need for contraception among the respondents driving up the rates of induced abortions, as despite adequate knowledge of abortions and contraceptives majority still don't use any form of contraception. The high incidence of induced abortions may also be due to the stigma and fear of becoming pregnant in school which may truncate their academic career. This is similar to findings in Nigeria and Ethiopia.^{22,29}

Most of the students 58% who had abortions reported it being done in a hospital by trained doctors, while 12.9% had it done by an untrained person or chemist. This value may be high as the study was done in an environment where the educational status made them aware of the dangers of using poor facilities. This was similar to findings

in Woliata soda University,²³ where 50% had hospital attended abortions, also similar to 66.7% found among students in Wachamo university.²²

This study found that majority of students believed a dilatation and curettage to be the safest method of an induced abortion. We also found that 27.9% of students believed postinor to be an abortifacient drug. This suggests that awareness is not synonymous to having an in-depth knowledge of contraceptives and methods of safe abortions. Hence the misconception that dilatation and curettage is the safest method of an induced abortion and postinor being an abortifacient and not an emergency contraceptive. Aziken et al found that only 42% of female students surveyed properly identified postinor as an emergency contraceptive drug.³³ These could be as a result of non-existent sex education due to cultural and religious reasons in our environment, so young people get the wrong information from peers.²⁹

Among contraceptive users, condoms had the highest rate with 17.9%. This was similar to a study by Ajayi et al, who found that condoms were the most used contraceptive method among undergraduates.³⁴ This could also explain the high rate of unwanted pregnancy and induced abortions, as correct and consistent use of condoms is low among young people.³⁴ This findings further emphasize the need for youth friendly centres and provision of improved sex education which would properly educate young people on better contraceptive options such as long acting reversible contraceptives and the double dutch technique.

Among the students sampled, majority said improved knowledge and teachings about contraceptives would be a good means of prevention of abortions, 8% said legalization of abortions would help prevent abortions, this was similar to findings in Ethiopia where 12.6% of students said abortions should be legalized.²³

There was a significant relationship between the use of contraceptives and the students who had

been pregnant, this is in keeping with several studies done in Nigeria, Ghana and Ethiopia.^{23,29,31,32}

Limitations of the Study

Since this study is done based on response of participants, the sensitive nature of the issue can lead them to social desirability bias, as a result it may lead to an underestimation of the prevalence, magnitude and risk factors for induced abortions.

Conclusion and Recommendations

This study has yielded considerable insight into the knowledge of abortions and practice and possible risk factors for the practice of abortion among female undergraduates in the University of Ibadan. It showed there was adequate knowledge of abortions and their complications, however the sexually active students didn't utilize contraceptive methods with a significant percentage resulting in unintended pregnancies for which they had abortions. Majority of students believed improved education about contraception would reduce the rate of induced abortions.

The findings show there is a need to improve sex education about contraception and safe sex practices and provide youth friendly centres in universities. There is also a need for training and retraining of health care workers about contraception among young people, so as to reduce the stigma experienced by these young people when they want to access contraception.

There is also a need to ensure education authorities make provisions to help students who get pregnant while in school, as fear of their education being truncated is a major risk factor for induced abortions. Cultural and religious leaders also have a role to play in reducing and tackling the stigma associated with unintended pregnancies as this could reduce the prevalence of young people seeking induced abortions.

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