

Awareness and utilization of emergency contraceptives among female undergraduates in Kano: North west Nigeria

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Abstract

Unintended pregnancy remains a major challenge to the reproductive health of women, especially female undergraduates. It is a cause of unsafe abortions and their attendant complications and contributes significantly to maternal mortality, which can be prevented by the use of emergency contraceptive. This is a descriptive cross-sectional study which was carried out among 374 non-medical, non-allied medical sciences, non-basic medical sciences and non-pharmaceutical sciences female undergraduates of Bayero University Kano, Northwestern Nigeria. Self-administered questionnaires were used for data collection and analyzed using SPSS Version 23.0 Software. The Chi square test was used to test for association at $p < 0.05$. The age range of the respondents was 15-45 years, with mean age of 24.98 ± 4.96 years. Most of the respondents were between the ages of 20-29 years. More than half of the respondents (260, 69.5%) were single. The majority of the respondents (334, 89.3%) were aware of emergency contraception. There was statistically significant association between sources of information and year of study with awareness of emergency contraception ($p < 0.05$). Respondents in this study demonstrated good awareness and knowledge of emergency contraception. Despite the conservative nature of the community where this study was conducted, there was good level of utilization of emergency contraceptives in the study population.

Introduction

Emergency contraception is defined as any drug or device used after intercourse to prevent pregnancy.¹ It is a method of preventing undesired pregnancy after unprotected sex or misuse of regular contracep-

tion.² It is estimated that of the 210 million pregnancies that occur each year,³ about 80 million are unintended.² Unwanted pregnancies are usually correlated with increased danger of the unsafe abortions, maternal morbidity and mortality.⁴ Worldwide, 73 million induced abortions occurred every year. Developing countries bear the burden of 97% of all unsafe abortions. More than half of all unsafe abortions occur in Asia, most of them in south and central Asia. In Latin American and Africa, the majority (approximately 3 out of 4) of all abortions are unsafe. In Africa, nearly half of all abortions occur under the least safe circumstances.⁵ Within 2010-2014, an estimated 8.3 million induced abortions occurred each year in Africa,⁶ as a result of which 36,000 women died from abortion related complications, and millions experienced short or long term disabilities.⁷ Moreover, more than half of all unsafe abortions in Africa are among young women aged 15-24 years.⁷ Studies on unwanted pregnancies in Nigeria indicate that between 20-28% of Nigerian women of reproductive age have experienced an unwanted pregnancy.⁸ About 610,000 abortions are performed annually and estimated about 12% of pregnancies in Nigeria end up in induced abortion.⁹ The proportion of induced abortions that developed complications is unclear, but it is widely believed that about 50% of those performed by non-physicians may develop complications.⁹

University students fall under sexually active age group and form a very high-risk group for unintended pregnancy because, a large percentage of them engage in sporadic premarital sex, which could be prevented by using emergency contraceptive.¹⁰ Unintended pregnancy either ends with unsafe abortion or early child bearing.¹⁰ This has a negative impact on the educational progress, future careers and even social interaction of female students by forcing them to drop out of school.¹⁰ Unintended pregnancy and unsafe abortion can be prevented by access to contraceptive methods including emergency contraceptives.^{1,5,10} Unintended pregnancy is a major challenge to the reproductive health of young adults especially, in developing countries like Nigeria where roughly one in every five pregnancies is unplanned.^{11,12} Recent report indicates a rising trend.¹² Many young women with unintended pregnancies resort to abortions which are mainly performed in unsafe conditions.¹² Nigeria has restrictive abortion laws and induced abortion is still regarded as a criminal offence, which is punishable under the penal code.¹³ Because of this, the practice is driven underground and performed clandest-

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Availability of data and materials: All data generated or analyzed during this study are included in this published article.

Ethics approval and consent to participate: The Ethics Committee of Bayero University Kano Health Ethical Review committee (NHREC/28/01/2020/AKTH/EC/3372). The study is conformed with the Helsinki Declaration of 1964, as revised in 2013, concerning human and animal rights. All patients participating in this study signed a written informed consent form for participating in this study.

Informed consent: Written informed consent was obtained from a legally authorized representative(s) for anonymized patient information to be published in this article.

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inely under questionable condition and in unsafe hands, hence the high morbidity and mortality associated with it.¹³ Emergency contraception has been shown to prevent up to 86% of expected pregnancies when administered within 72 hours of unprotected coitus.^{14,15} The common reasons for the use of emergency contraception are the non-use of condoms, breakage and missing of some doses of oral contraceptive pills.¹³ It is also a very critical option for preventing an unwanted pregnancy following rape, incest or any other form of sexual assault.¹³

Since it is difficult to determine the infertile period of the menstrual cycle with certainty, emergency contraceptive is better provided to any woman who is concerned about her risk of pregnancy regardless of the cycle and day of exposure.¹²

Several regimens are currently available for emergency contraception.¹³ However, the recommended methods in clinical practice include the hormonal methods: proges-

terone-only pills, combined estrogen-progesterone pills, the non-hormonal agents such as Copper- T intrauterine contraceptive device and recently the progesterone receptor modulator known as ulipristal acetate.¹⁴ For hormonal emergency contraceptives, they are safe, effective and easy to use and no medical examination or pregnancy test is required and can be used at any time of the menstrual period.¹⁶ They are readily available at government and private clinics and as over the counter medication in drug stores.¹⁷ The limitations or disadvantages of hormonal emergency contraceptives are that they are mostly effective only if used within 120 hours of unprotected intercourse and they do not protect against sexually transmitted infections.¹⁷ They cannot be used as regular contraceptives.¹⁶ Intrauterine contraceptive devices are most useful when more than 72 hours have elapsed after the unprotected intercourse, when hormonal contraceptives are no longer very effective.¹⁷ They are also useful when client is considering long term contraceptive solution.¹⁸

Despite the availability, safety and efficacy of the specific emergency contraceptive agents, there is still limited knowledge and utilization among women of reproductive age group, especially in a predominant conservative community like the one where this study takes place.^{12,14}

Because of the rising trends in unintended pregnancies, which ends either as unsafe abortion or early childbearing, both of which could be prevented by emergency contraceptive,^{10,12} an assessment of awareness and utilization of emergency contraception among this population is timely.

Aim

The aim of the study was to determine awareness and utilization of emergency contraception among female undergraduates in Kano, Northwestern Nigeria.

Materials and Methods

This was a descriptive cross-sectional survey conducted among female undergraduates of the Bayero University Kano from 1st April 2019- 25th July 2019. Bayero University Kano (BUK) is a University situated in Kano, Kano State, Nigeria. It was founded in 1977, when it was renamed from Bayero University College and upgraded from University College to University. It is the first University in Kano State. It has two campuses and faculties of Agriculture, Arts and Islamic Studies, Basic Medical Sciences, Clinical Sciences, Education, Engineering, Law, Science, Earth and

Environmental Studies, Pharmacy, Social Management Science, and the recent Faculty of Computer Science and Information Technology. The University is located approximately 12.8 kilometers from the city along the Kano–Gwarzo Road.

The study population comprised female undergraduate students of the Bayero University Kano. The sample size was determined using the formula:

$$n = z^2 pq / d^2$$

Where n is the sample size, d is the precision in 5%, z is the confidence limit of the study (z = 1.96), p = 0.33, as 33% of respondents were aware of emergency contraception.¹³

$$q = 1 - p = 1 - 0.33 = 0.67$$

d = 0.05 is the acceptable error of the estimator at 95% confidence interval

$$n = z^2 \times p \times q / d^2 = (1.96)^2 \times (0.33) \times (0.67) / (0.05)^2 = 340$$

An attrition rate of 10% is 34 was added and therefore new sample size was 374.

The sample comprised of 374 female undergraduates, who formed the study population. Forty-two questionnaires were administered to female undergraduates in

each of the nine faculties. Students from College of Medicine, Pharmacy and Basic medical Sciences were excluded because of the presumed prior knowledge of the emergency contraception, taught to them in their training. Respondents were individualized by multistage sampling technique. Sampling frames comprising list of all departments in the nine faculties were obtained one department was selected from each faculty by simple random sampling. A total of nine departments were selected. A level was selected from each department by simple random sampling. Each level selected were briefed about the study through the help of class representatives before the lectures. Those willing to participate in the study were selected by systematic random sampling technique; this was done by selecting every third female student seated after randomly selecting a starting point.

The questionnaire was self administered with both open and closed ended questions. It was pretested and adjustments were made.

The data obtained from the respondents were analyzed using Statistical Software

Table 1. Socio-demographic characteristics of the respondents (n=374).

	Frequency	Percentage
Age range (years)		
15-19	38	10.2
20-24	161	43.1
25-29	112	29.9
30-34	40	10.7
35-39	17	4.5
40-44	5	1.3
≥45	1	0.3
Marital status		
Single	260	69.5
Married	88	23.5
Widowed	9	2.4
Divorced	17	4.5
Tribe		
Hausa	177	47.3
Yoruba	103	27.5
Igbo	57	15.2
Others	37	9.9
Religion		
Islam	248	66.3
Christianity	110	29.4
Others	16	4.3
Place of residence		
On campus	133	35.6
Out of campus alone	128	34.2
Out of campus with family members	113	30.2
Parity		
Parous	155	41.4
Nulliparous	219	58.6
Level		
100	79	21.1
200	77	20.6
300	79	21.1
400	106	28.3
500	33	8.8

Package for Social Sciences (SPSS) version 23.0 (IBM Corp, Armonk NY, USA) for windows. The data were presented in frequencies and percentages. The chi-square test was used to test for association at $p < 0.05$.

Results

There were 374 respondents who participated in the study (Table 1). The age range of the respondents was 15-45 years, with a mean age of 24.98 ± 4.96 . Most of the respondents were between the ages of 20-29 years. More than half of the respondents, 260 (69.5%) were single, and few of them were widows. The majority of the participants in the study had not delivered. Most of the respondents identified themselves as Hausas. Most of the respondents were Muslims, followed by Christians and few other confessions. Almost the same number of respondents lived on campus or outside of campus alone, and a slightly lower number of them lived outside the campus with their families. Most of the respondents were in their fourth year in the University, followed by the first- and third-year students.

The majority of the respondents (338, 89.3%) were aware of emergency contraception (Table 2). Most of the respondents (254, 67.9%) had good knowledge of emergency contraception. Source of information were friend, social media, health worker, mass media and other sources however, friend took a lead as a source of information. Most of the respondents had indicated that the purpose of the use of emergency contraceptive is to prevent unwanted/unintended pregnancy. The majority of the respondents were aware of progesterone pills as a method of emergency contraception. Some were aware of the use of copper intrauterine contraceptive device and combined pills as methods of emergency contraception. Most of the respondents indicated that the emergency contraceptive is effective if taken within 24 hours and within 3 days of unprotected sexual intercourse. More than half of the respondents indicated that the emergency contraceptives are available and some of them indicated that they are readily available.

More than half of the respondents had used modern contraceptives (Table 3). Majority of the respondents had used one form of emergency contraceptive or the other. Most of the respondents that used the emergency contraceptives got them from the pharmacy, while some got them from their friends. Majority of the respondents who had used emergency contraceptive used levonorgestrel as method of emer-

gency contraceptive.

More than half of the respondents felt that the emergency contraceptive is effective. The majority of the participants in this study indicated that use of emergency contraception can affect future fertility. The majority of the respondents perceived that there are restrictions to the use of emergency contraceptive due to some medical conditions.

Discussion

Almost half of the respondents 43% were aged 20-24 years, this was similar to the findings 19-30 years in northeastern Nigeria,¹⁹ which is also similar to the findings in Eastern Ethiopia²⁰ and Ouagadougou in Burkina faso.²¹ However, this range differs with one reported from the Southeastern Nigeria.¹¹ The majority of the study population were single constituting almost 70% of the respondents, this is in keeping with the university student's population in this part of the country. This is in conformity with the findings in Ado Ekiti,²² Anambra,¹¹ Kaduna,²³ Harar,²⁰ and Maiduguri,¹⁹ where the singles constituted the main study population. This was found to be lower than 98.4% and 90.9% reported

in Kathmandu in Nepal²⁴ and Nairobi in Kenya.² Almost half of the study population was of Hausa extraction; this is because the university is located in the northwestern Nigeria where Hausas are the predominant population. More than half of the respondents were Muslims; this is also connected to the region where the study was conducted. However, this contradicts the finding in Abeokuta²⁵ and Nairobi² where the respondents were majorly of Christian faith. Students were fairly distributed according to the place of residence, those living on the campus were slightly higher, reason being that majority of the study population were in their fourth year of study and were entitled to hostel accommodation. This differs from the findings in Anambra,¹¹ Abeokuta⁵ and Nairobi.² More than half of the participants were nulliparas, this is not surprising because of the peculiarity of this study population. Fourth year students predominated in this study, because most of them live on the campus.

The majority of the respondents (89.3%, 334) was aware of emergency contraception. This finding may be due to availability of several sources of information. This finding is in tandem with what was found in earlier studies in Anambra,¹¹ Abeokuta,²⁵ Gaborone,²⁶ Kano,²⁷ Harar,²⁰

Table 2. Awareness of the respondents.

Awareness	Frequency	Percentage
Aware of EC	334	89.3
Unaware of EC	40	10.7
Knowledge of EC		
Knowledgeable	254	67.9
Not knowledgeable	120	32.1
Source of information		
Friend	118	31.6
Social media	104	27.8
Health worker	99	26.5
Mass media	42	11.2
Others	11	2.9
Purpose of use of EC		
Prevention of STI	43	11.3
Prevention of unwanted/unintended pregnancy	174	45.5
For both reasons above	143	37.4
For other reasons	13	3.4
Ec methods awareness		
Levonorgestrel (Postinor 2)	169	44.9
Copper IUCD	73	19.4
Combined OCP (Yuzpe)	89	23.7
Others	45	12.0
Timing of use of EC		
24 hours	165	44.1
3 days	105	28.1
5 days	63	16.8
7 days	16	4.3
After missed period	25	6.7
Total	374	100

Maiduguri,¹⁹ Nairobi,² Ouagadougou²¹ and Osun.²⁸ This is lower than what was reported in Wolkite in Ethiopia²⁹ and Kathmandu in Nepal.²⁴ However, awareness was reported to be poor in some previous studies^{23,30} More than half of the respondents had accurate knowledge of emergency contraception. Accurate knowledge of emergency contraception was reported low in Gaborone, Botswana²⁶ and in Nairobi, Kenya.² Sources of this information included friends, social media, health workers, mass media, and other sources. However, friends, social media and health workers were the main sources of the information in this study. This is similar to what was reported by earlier researchers.^{11,23,25,26,27} However, friends and health personnel were the major source of information from similar study in northeastern Nigeria¹⁹ and Southwestern Nigeria.²² Prevention of unwanted and unintended pregnancy was identified by most respondents as a reason for taking emergency contraceptives. This reason was similar to the finding by researchers in Ouagadougou.²¹ Most of

respondents identified levonorgestrel pill as the emergency contraceptive method, this is consistent with the findings in Anambra,¹¹ Kaduna²³ and Maiduguri.¹⁹ Others identified use of copper intrauterine contraceptive device and use of combined contraceptive pill as other methods. This may be due to availability of the levonorgestrel pills in the patent medicine stores in our environment and the ease of its administration. Most of the respondents identified administration of emergency contraceptive within first 24 hours following unprotected intercourse as effective. This is similar to the finding in Anambra.¹¹ More than half of the respondents suggested that the emergency contraceptives are available. Most of them had used one form of modern contraceptive method or the other. This contradicts the finding reported in the earlier studies.^{11,27} However, the study population differs and the difference in timing may explain the disparity in the finding. Significant number of the respondents had used one form of emergency contraceptive method or the other. This is similar to the finding in Maiduguri¹⁹

and Wolkite.²⁰ However, differs from what was reported by earlier researchers where utilization of contraceptive was found to be low,^{2,11,22,24,27,30} this may be explained by the difference in the study population. These contraceptives were mostly secured from pharmacy stores or friends. Method mostly used was the levonorgestrel pill (postinor-2) that accounted for (144, 47.2%) of the respondents. This is in conformity with the rate reported in northeastern Nigeria,¹⁹ Wolkite²⁰ in Ethiopia and Ouagadougou in Burkina faso.²¹ More than half of the respondents felt that emergency contraceptive is effective. However, most of the respondents felt that use of emergency contraceptives can affect the future desire to bear children. Significant number of the respondents was of the view that, there are restrictions to the use of emergency contraceptive due to other health conditions.

There was significant association between sources of information and year of study with awareness of emergency of contraception ($p < 0.05$). This may be due to likely easier access of information among older students. This was in contrast with the findings by other researchers.^{26,29} There was no significant association between marital status and awareness and utilization of emergency contraception ($p > 0.05$). This may be due available sources of information and not only married women were sexually active among the study population hence, the utilization among the singles. There was no significant association between age and year of study with utilization of emergency contraceptives ($p > 0.05$). This was because the age and year of study were immaterial in determining sexual activity among the study population. This was contrary to the finding in Botsowana.²⁶

Table 3. Use of emergency contraceptives among respondents.

	Number	Percentage
Emergency contraceptive use		
Yes	257	68.7
No	117	31.3
Modern contraceptive use		
Yes	241	64
No	133	36
Source of EC		
Patent medicine store	35	13.6
Hospital	35	13.6
Pharmacy	100	38.6
Friend	76	29.6
Others	11	4.3
Availability of EC		
Readily available	121	32.3
Available	171	45.7
Scarce	41	11
Not available	41	11
Type of EC used		
Levonorgestrel only	121	47.1
Copper IUCD	49	19.1
Combined pills only	49	19.1
Combination of methods above	38	14.7
Effectiveness rating		
Very effective	128	34.2
Effective	175	46.8
Not effective	71	19
Future fertility affectation by EC		
Yes	253	67.6
No	121	32.4
Total	374	100
Restriction to use of EC due to health condition		
Present	233	62.3
Absent	141	37.7
Total	374	100

Conclusions

Respondents in this study had demonstrated good awareness and knowledge of emergency contraception. Utilization of emergency contraceptives was found to be above average among the study population.

Recommendations

It was found that the major sources of information about the emergency contraception among the students studied, were friends and social media, therefore it is recommended that the University Health Services should strengthen the reproductive health services including the emergency contraception as well as making the information about emergency contraceptive available to students.

It is recommended that a dedicated fam-

ily planning unit should be established in the University health center, where students can access the family planning services including emergency contraceptive as it was observed that students only access the service from a pharmacy store or even a friend. This will eliminate wrong dosage and its attendant complications.

Introduction of formal lectures on reproductive health including emergency contraception is recommended to enhance students' awareness and utilization of emergency contraception.

Limitations

There were incomplete filling of some questionnaires by the respondents; this led to incomplete information about such respondents.

Some of the questionnaires were missing due to inability of the respondents to forward them after filling.

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