

# Emergency Contraception: Awareness, Perception and Practice among Female Undergraduates in Imo State University, Southeastern Nigeria

Ojiyi EC, Anolue FC, Ejekunle SD, Nzewuihe AC<sup>1</sup>, Okeudo C, Dike EI, Ejikem CE<sup>2</sup>

Departments of Obstetrics and Gynecology, and <sup>1</sup>Surgery, Imo State University Teaching Hospital, Orlu, Imo State,

<sup>2</sup>Department of Obstetrics and Gynecology, Abia State University Teaching Hospital, Aba, Abia State, Nigeria

## Address for correspondence:

Dr. Ojiyi Emmanuel Chukwuemeka,  
Department of Obstetrics and  
Gynecology, Imo State University  
Teaching Hospital, PMB o8 Orlu, Imo  
State, Nigeria.  
E-mail: ojyiemeka@yahoo.com

## Abstract

**Background:** Limited knowledge and practice of contraception is a global public health problem. Unintended pregnancies are the primary cause of induced abortion. When safe abortions are not available, as in Nigeria with restricted abortion laws, abortion can contribute significantly to maternal mortality and morbidity. Adequate information on the awareness and the use of emergency contraception is necessary for planning interventions in groups vulnerable to unwanted pregnancy. **Aim:** The aim of the following study is to access the awareness, perception and practice of emergency contraception among female undergraduates in Imo State University, South Eastern Nigeria. **Subjects and Methods:** A questionnaire based cross-sectional survey using female undergraduates selected randomly from Imo State University, Owerri. **Results:** A total of 700 students participated in the study. Awareness of emergency contraception was very high (85.1%) (596/700). The awareness was significantly higher amongst students in health related faculties than in the non-health related faculties ( $P = 0.01$ ). The main sources of information were through friends (43.1%) (317/700) and lectures (22.1%) (192/700). High dose progestogen (postinor-2) was the most commonly known type of emergency contraception (70.8%) (422/596). Only 58.1% (346/596) of those who were aware of emergency contraception approved of their use. The major reasons given by the 41.9% (250/596) who disapproved of their use were religious reasons (50.4%) (126/250) and that they were harmful to health (49.2%) (123/250). Two-third (67%) (469/700) of the students were sexually active and only 39.9% (187/469) of them used emergency contraception. High dose progestogen (postinor-2) was again the most commonly used method (70.8%) (422/596). The most common situation in which emergency contraception was used was following unprotected sexual intercourse (45.5%) (85/144). Only 34.6% (206/596) of those who were aware of emergency contraception identified correctly the appropriate time interval for its effectiveness. **Conclusion:** Although the awareness of emergency contraception was high amongst female undergraduates, the attitude and practice are still poor. The inclusion of reproductive health education as part of the undergraduate school curriculum might help to change students' attitude toward emergency contraceptives.

**Keywords:** Emergency contraception, Owerri, Students

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## Introduction

Unintended pregnancies are the primary cause of induced abortion and is linked to numerous maternal and child health problems.<sup>[1]</sup> They result in about 42 million induced abortions per year world-wide.<sup>[2]</sup> When safe abortions are not available, as in Nigeria with restricted abortion laws, abortion can contribute significantly to maternal mortality

and morbidity.<sup>[3]</sup> Over the 6 years between 1995 and 2000, there were an estimated 338 million unintended pregnancies world-wide<sup>[4]</sup> resulting in nearly 700,000 maternal deaths. Out of these, 64% were from complications from unsafe abortions.<sup>[4]</sup> Most of the deaths occurred in less developed parts of the world, where family planning and reproductive health services were less available.<sup>[4]</sup>

In cultures that practice honor killing, unintended pregnancy may increase the woman's chance of being killed. Unwanted pregnancy and births resulting from these pregnancies are also psychologically distressing.<sup>[5,6]</sup> Some find abortion morally objectionable.<sup>[1]</sup>

Reasons cited for unintended pregnancies include non-usage of contraceptives, using contraceptives inconsistently or incorrectly and contraceptive failure.<sup>[2]</sup>

The use of modern contraceptive methods has greatly reduced the incidence of unintended pregnancy and by extension the incidence of unsafe abortions.<sup>[2]</sup>

Emergency contraception, also known as post-coital or morning after contraception, refers to any drug or device used to prevent pregnancy following unprotected sexual intercourse or potential contraceptive failure.<sup>[7-11]</sup> It has been shown to be capable of preventing at least 86% of expected pregnancies when administered within 72 h of unprotected coitus.<sup>[7,12,13]</sup>

Several regimens are currently available. However, the recommended methods in clinical practice include the combined estrogen-progesterone pills, otherwise known as the Yuzpe regimen, the progesterone-only pills (e.g. postinor-2) and Copper-T intrauterine contraceptive device.<sup>[14]</sup>

Other methods of emergency contraception not commonly used in clinical practice include: The progesterone antagonist, ulipristone acetate (ELA-1 and ELA 2), mifepristone, high dose estrogen regimens, synthetic androgen-Danazol and the luteinizing hormone releasing hormone analogue, example Buserelin.<sup>[15]</sup>

This "second chance" method is invaluable for women who have been forced into unplanned, unprotected intercourse, following method failure or incorrect use. However, despite the availability, safety and efficacy of the specific emergency contraceptive agents, there is still limited knowledge and practice of emergency contraception amongst women of reproductive age group.<sup>[16-19]</sup> This limited knowledge even in situations of potential regular contraceptive failure, is a global public health problem.<sup>[20,21]</sup> Consequently, the incidence of unwanted pregnancy and abortion continue to rise in geometrical progression all over the world.<sup>[22]</sup> Thus of the estimated 210 million pregnancies that occur annually, 46 million (22%) are said to be unwanted and more than 90% of these unwanted pregnancies usually end in induced abortion with its attendant complications.<sup>[22]</sup> The situation is worse in developing countries like Nigeria where an estimated 610,000 unwanted

pregnancies are terminated annually.<sup>[23]</sup> The resultant effect of this has been a persistent rise in maternal mortality ratio with abortion constituting up to 40% in some cases.<sup>[24]</sup>

Thus unsafe abortion no doubt is a major public health problem. Female undergraduates obviously constitute a high risk group. With the increasing incidence of cultism and other social vices, including rape in our schools, the need for adequate health education on emergency contraception cannot be overemphasized. It has repeatedly been estimated that widespread use of emergency contraception may significantly reduce the number of abortion related morbidity and mortality.<sup>[6,13,16,21,22]</sup> In view of this, National Family Planning programs of developing countries have highlighted regular use of contraception and additionally, the emergency contraception.<sup>[25]</sup>

Despite all these, many Nigerian women lack information on the use of emergency contraception even in dire situations of possible "regular" contraceptive failure.<sup>[19,25-28]</sup> Previous literatures on this subject have mainly dwelt on the effectiveness and safety of these methods without trying to address the issue of awareness and acceptability of the various methods.<sup>[9,13-15]</sup>

The objective of this study is to assess the awareness, perception and practice of emergency contraception amongst female undergraduates in Imo State University, Owerri, South-Eastern Nigeria.

## Subjects and Methods

### Study design

A questionnaire based cross-sectional survey using 700 female undergraduates selected randomly from the University.

### Study population

A total of 2,553 female undergraduates were accommodated in the five female hostels.

### Sampling method

A multistage sampling method was used. In the first stage, a simple random sampling method was used to select three female hostels out of a total of five female hostels in Imo State University. In the second stage, proportionate stratified sampling method was used to distribute the sample size to the three selected female hostels. In the third stage, a systematic sampling method was used to select every third room in the three selected hostels. In the fourth stage, a simple random sampling method was used to select four inmates out of six inmates in each selected room. The selected students were then used for the study.

### Sample size determination

This was calculated using the Cochran formula  $n = Z^2 Pq/d^2$  where  $n$  = sample size,  $Z$  = coefficient of  $Z$ , statistics obtained from the standard normal distribution table,  $P$  = prevalence

rate (in %),  $q = 100 - P$  and  $d =$  sampling error tolerated (in %). Using a prevalence rate of 67.8% obtained from a previous study from Lagos, South-Western Nigeria,<sup>[10]</sup> with a confidence limit of 95% ( $d = 5\%$ ) and  $Z$  of 1.96, the calculated minimum sample size was 335. The sample size of 700 used in this study was far above this calculated figure. This would help reduce sampling error and improve the accuracy of the study.

### Date collection

This was obtained using self-administered, semi-structured and pre-tested questionnaires. The questionnaires were developed by the authors and piloted at the Federal Polytechnic Nekedde, Owerri, amongst 30 respondents to remove areas of ambiguity before being used for the study. Each questionnaire consisted of 16 questions organized to cover students' socio-demographic characteristics, awareness, perception and use of emergency contraception. A written approval from the Ethics and Research committee of the Institution was obtained prior to the commencement of the study and a verbal consent was sort and obtained from all Hall supervisors and the selected students. The questionnaires were then distributed to them in the evenings when most students were available in their rooms. Most were collected back the same evening immediately after filling; the rest were collected the following day. Out of the 730 questionnaires distributed, 14 could not be retrieved and 16 were incorrectly filled. The 700 retrieved and correctly filled questionnaires were used for the study. The whole process of distribution and collection of questionnaires took 6 weeks, from 2<sup>nd</sup> September to 14<sup>th</sup> October, 2009.

### Statistical analysis

This was by descriptive and inferential statistics using statistical package for Social Sciences software version 13.0 (SPSS Inc.: 2004, Illinois Chicago, U.S.A.). The data was presented using frequency tables and percentages. The Chi-square test was used to test for association between two variables where appropriate. A  $P$  value of  $<0.05$  was considered as significant

## Results

A total of 730 questionnaires were distributed but 700 were retrieved correctly filled, giving a response rate of 95.9% (700/730). The mean age of the students was 23.01 (2.6) (range: 17-40) years. Majority (59%) (413/700) was between 20 and 30 years. Out of these 700 undergraduates, 672 (96%) (672/700) were single while the remaining 28 (4%) (28/700) were married [Table 1].

Majority of the students, 228 (32.6%) and 144 (20.6%) were in their 5<sup>th</sup> and 1<sup>st</sup> year of study respectively. Medical students and students from the faculty of business administration constituted 23.4% (164/700) and 22% (156/700) respectively of the students studied. The rest of the students were from the faculty of environmental studies (20.2%) (142/700) and faculty of health sciences (12.8%) (90/700) [Table 1].

Of the 700 respondents, 596 (85.1%) were aware of emergency contraception while only 104 (14.9%) were not aware of emergency contraception. The awareness of emergency contraception was significantly higher among students in health related faculties than students in non-health related faculties ( $P < 0.001$ ) [Table 2]. Of those who were aware of emergency contraception, their main sources of information were friends (53.1%) (317/596). Only 5.4% (32/596) obtained information from their parents [Table 3].

Of the 596 students that were aware of emergency contraception, 422 (70.8%) knew only about postinor-2. 36 (6.0%) (36/596) erroneously mentioned certain local traditional methods as part of emergency contraception [Table 3].

Of those who were aware of emergency contraception, only 346 (58.1%) approved of their use [Table 3]. Of those who disapproved of their use, the most common reasons cited were religious reasons (50.4%) (126/250) and that they were harmful to health (49.2%) (123/250). 9.6% (24/250) did not have any reason for their disapproval [Table 4].

Two-third (67%) (469/700) of the respondents were sexually active. Of the 469 students that were sexually active, only 187 (39.9%) had used emergency contraception, majority 144 (77.0%) used postinor-2. Two (1.1%) erroneously used certain local traditional methods as emergency contraception [Table 5]. The most common situation cited for

**Table 1: Socio-demographic characteristics of the respondents**

Sociodemographic characteristics	No. (%)
Age	
<20	220 (31)
20-30	413 (59)
>30	67 (10)
Total	700 (100)
Marital status	
Single	672 (96)
Married	28 (4)
Total	700 (100)
Faculty	
Med science/dentistry	164 (23.4)
Bus admin	156 (22.4)
Law	148 (21.1)
Environmental sciences	142 (20.2)
Health sciences	90 (12.8)
Total	700 (100)

**Table 2: Awareness in health related versus non-health related faculties**

Faculty	Aware	Not aware	Total	Percentage of aware
Health related	249	9	254	35.6
Non-health related	350	96	446	50.0
Total	596	105	700	85.1

$\chi^2=41.25$ ,  $df=1$ ,  $P=0.0001$

**Table 3: Information on emergency contraceptives (N=596)**

	No. (%)
Source*	
Friends	317 (53.2)
Lectures	192 (32.2)
Internet	103 (17.3)
Newspapers/journals	45 (7.6)
Workshops/seminars	39 (6.5)
Parents	32 (5.4)
Type#	
Postinor-2	422 (70.8)
COCP	180 (30.2)
Estrogen	40 (6.7)
IUCD	40 (6.7)
Traditional methods (e.g., herbs, etc.,)	36 (6.0)
Approval	
Yes	346 (58.1)
No	250 (41.9)

COCP: Combined oral contraceptives pills, IUCD: Intrauterine contraceptive device.

\*Multiple sources in most cases, #Multiple knowledge in most cases

**Table 4: Reasons for disapproval of emergency contraception**

Reason*	No. (%)
Religious reasons	126 (50.4)
Harmful to health	123 (49.2)
No reason	24 (9.6)
Not effective	6 (2.4)
Not easily available	6 (2.4)

\*Multiple reasons in most cases

**Table 5: Types\* of emergency contraceptives used by sexually active students (N=187)**

Type	No. (%)
Postinor-2	144 (76.8)
COCP	63 (37.0)
IUCD	9 (7.20)
Estrogen	6 (5.8)
Traditional methods	2 (1.1)

\*Multiple types in most cases. COCP: Combined oral contraceptives pills, IUCD: Intrauterine contraceptive device

using emergency contraception was following unprotected sexual intercourse (45.5%) [Table 6].

110 (58.8%) of the sexually active students that had used emergency contraception maintained that it worked all the time; 17 (9.1%) said that it never worked at all.

Only 206 (34.6%) out of the 596 (85.1%) that were aware of emergency contraception identified 72 h as the correct time interval for effectiveness of emergency contraceptive drug use. Majority, 374 (62.8%) did not have any idea of the correct time interval for its effectiveness [Table 7].

## Discussion

This study revealed that there was a very high level of awareness of emergency contraception (85.1%) amongst female

**Table 6: Situations in which emergency contraception was used**

Situation	No. (%)
Following unprotected sexual intercourse	85 (45.5)
Sexual intercourse following miscalculation of safe period	60 (32.1)
Following breakage/slippage of condom	24 (12.8)
Following sexual assault, e.g., rape	4 (2.1)
Sexual intercourse following skipping the use of contraceptive pills	4 (2.1)

**Table 7: Appropriate time interval for effectiveness of ECP**

Appropriate time for ECP effectiveness	No. (%)
No idea	374 (62.8)
Up to 72 h	206 (34.6)
Up to 4 days	8 (1.3)
Up to 1 week	6 (1.0)
Up to 2 weeks	2 (0.3)
Total	596 (100.0)

ECP: Emergency contraceptive pills

undergraduates in Imo State University, Owerri. This figure is similar to figures reported in similar studies from England, USA and few local studies.<sup>[17,26-33]</sup> However, it is higher than most figures reported from local studies.<sup>[16,19,21,25,28,34,35]</sup>

This high figure might not be unconnected with the recent surge of information technology (internet) in most tertiary institutions in the country as it constituted up to 17.3% of the initial source of information.

The most common initial source of information was through friends. That lectures was one of the common sources of information was not surprising as contraception now constitutes part of the academic curriculum of both the medical and health science students. The fact that journals/newspapers and workshops/seminars constituted only 7.6% and 6.5% respectively indicates the need for more coverage to be given to this method of contraception via relevant journals and workshops. Again, that only 3.4% obtained the information through their parents reemphasizes the fact that parents often fail to provide contraceptive information to their children due to religious and socio-cultural reasons.<sup>[36-38]</sup>

High dose progestogen (postinor-2) was the most commonly known emergency contraceptive agent. This is probably because of its availability, affordability and ease of administration because there is no known social marketing campaign of this method of contraception in this part of the country.

Despite the high level of awareness of emergency contraception, only 58.1% approved of their use. This figure is similar to the 59.1% reported in a previous study in Owerri, among healthcare professionals.<sup>[39]</sup> The major reasons given by the respondents that disapproved of their use were mainly religious reasons and erroneous misconception that that they were harmful to health. This poor attitude of the respondents

to emergency contraception is in agreement with the findings of other authors.<sup>[16,18,21,34,37,39,40,41]</sup>

Similarly, the use of emergency contraception was very low as only 39.9% of the sexually active students had ever used any method. This is similar to the 37.8% reported from a similar study from Lagos, South-Western Nigeria.<sup>[16,25]</sup> and higher than the 11.8% reported amongst female tertiary students in Durban, South Africa.<sup>[42]</sup> That majority (76.8%) of those who had used emergency contraception, used postinor-2 might, again, be probably due to its availability and ease of administration. Majority of those who had used emergency contraception cited unprotected sexual intercourse as the indication for their use. This shows that most students still engage in unprotected sexual intercourse despite the widespread campaign on condom use. Other modern methods of regular contraception are still poorly practiced by our students as shown in some other studies.<sup>[26,38]</sup>

Since abortion is still considered illegal in Nigeria, most of these unwanted pregnancies will be terminated by quacks in unhygienic environments with serious consequences.<sup>[22,23,25]</sup> The need for contraceptive use, including emergency contraceptives amongst our youths will invariably reduce the incidence of unplanned pregnancies and hence the need for abortion.<sup>[33,34]</sup> Only 34.6% of those who were aware of emergency contraception identified 72 h as the correct time interval for optimum effectiveness of the drugs. This figure is not surprising as only 59.4% of those who had emergency contraception reported that it was effective all the time as opposed to the 86% reported in the literature.<sup>[7,8,13]</sup> This figure is in tandem with the findings of other authors.<sup>[16,33,39]</sup>

One major limitation of this study is that it is an institution based study and might not necessarily represent the views of the population in general. Besides, the study did not explore the reasons of low use and attitude using validated sets of attitude scales.

## Conclusion

The awareness of emergency contraception is high among female undergraduates Imo State University, Owerri. However, the perception and practice are still poor due to varying reasons amongst which are certain misconceptions about them. More efforts at health promotions are still necessary so as to dispel the current misconceptions especially regarding their safety. Parents should be encouraged to discuss reproductive health with their children. This will help in reducing the incidence of unplanned pregnancies with all its attendant sequelae.

Religious leaders should be engaged in family planning promotions as religious views were one of the reasons cited for disapproval for the use of contraceptives. As postinor-2 was the most commonly used emergency contraceptive agent, a social marketing campaign strategy should be employed in

the dissemination of information regarding it as in the case in many parts of the developing world.

Future studies should aim at exploring the reasons for low use despite the high level of awareness of emergency contraceptives as well as explore attitude using validated sets of attitude scales.

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