

ORIGINAL ARTICLE

Knowledge and use of emergency contraception by medical doctors on internship in a tertiary healthcare facility in Nigeria

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Abstract

Context: Emergency contraception (EC) is widely used to prevent unwanted pregnancy and it is largely adopted in many countries as over the counter drug to improve access.

Aims: To determine and compare the correct knowledge, attitude and current use of EC among newly graduated medical doctors (MDs).

Settings and Design: A cross-sectional study conducted among 255 newly graduated MDs at the University College Hospital, Ibadan, Nigeria.

Materials and Methods: A pretested self-administered questionnaire was used to obtain data from consenting participants.

Statistical Analysis Used: Descriptive, bivariate, and multivariable analyses were performed, and statistical significance was set at 0.05. Statistical Package for Social Science version 15.0 (Chicago, IL, USA) software was used.

Results: The mean age of the respondents was 27.2 years (standard deviation = 2.1). The commonest indication for emergency contraceptive use mentioned was rape-96.5%. About 70% support EC in Nigeria, while about a quarter (26.9%) routinely counsel women about ECP use. About 21% of respondents currently use EC. Logistic regression analysis revealed significant results for gender [odds ratio (OR) = 3.64; 95% confidence interval (CI) OR = 1.31-10.01], religion (OR = 0.26; 95% CI OR = 0.11-0.630) and marital status (OR = 0.19; 95% CI = 0.07-0.56).

Conclusion: The correct knowledge and professional disposition toward EC as a form of contraception is low. We recommend that in-service training should focus more on EC to improve the quality of their knowledge and attitude towards it.

Key words: Emergency contraception, knowledge, Medical Doctor, Nigeria

Date of Acceptance: 09-Dec-2013

Introduction

Each year, of the 210 million pregnancies that occur annually worldwide, about 80 million (38%) are unplanned, and 46 million (22%) end in abortion.^[1] In Nigeria, unintended intercourse is the primary cause of unwanted pregnancies, and majority end in abortion with fatalities.^[2-4] Estimates shows that about 610,000 abortions

are procured annually at a rate of 25.4 per 1,000 women aged 15-44 years which accounts for 40% of these maternal deaths – approximately 50,000.^[1] Studies in Nigeria show that induced abortions from unwanted pregnancy contribute significantly to maternal mortality, with a large proportion of these deaths among teenagers.^[4,5]

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Access this article online

Quick Response Code:



Website: www.njcponline.com

DOI: 10.4103/1119-3077.134028

PMID: 24909465

Emergency contraceptives are methods that are used after either unplanned consensual or coercive intercourse including failure of conventional contraception (missed pills, burst condom, and so on) to prevent an unwanted pregnancy, and likelihood of abortion and its associated complications.^[6] There are two major effective hormonal emergency contraception (EC) methods namely; combined ECP that contain oestrogen – ethinylestradiol and progestin as levonorgestrel or norgestrel referred to as Yuzpe regimen. The second method is progestin only, which contains levonorgestrel or norgestrel which is popularly marketed in Nigeria as “postinor.” The ideal time to commence EC pill use is within 12 h of sexual intercourse but research evidence showed that it is still effective up to 72 h.^[7] The most popular mechanism of action of the pill is that it prevents ovulation from occurring.^[7] Intrauterine contraceptive device (IUCD) is another EC method that has been shown to be effective up to 12 days after an unprotected sexual intercourse.^[7] Insertion of IUCD for EC is believed to stimulate inflammatory response of the endometrial lining and this inhibits implantation of the zygote.^[7]

The use of EC has been hampered by lack of adequate information on its benefits and mechanism of action, as well as fears related to the widely held misconception. In addition, the judgmental attitude of some providers to the needs of their clients is also not helpful.^[8] Many countries still require a medical prescription to access EC, this practice reduce the chance of using the method at the appropriate time.^[9] In Nigeria, EC pills are purchased across the counter by the end users, whereas the IUCD method is prescribed and requires health care provider for its use. Health service provider factor is an important determinant of the acceptance and use of EC by target groups.

In general, physicians are expected to be knowledgeable about ECs because they provide information and prescribe it for their clients.^[10] The information should include among other things mechanisms of action and side effects of ECs. However, lack of appropriate knowledge could lead to wrong advice and prescription by them leading to widespread misuse, which could trigger sexual liberty and other associated complications. Apart from this, some providers exhibit judgmental attitudes to the ECP request of their clients, especially those without established sexual relationship. Most published articles on knowledge, attitude, and practice of physicians on ECs were largely from Western world,^[11-13] whereas the most available ones on emergency contraceptive in developing countries focused more on clients’ knowledge, attitude, and practice with no comparative attention to the health workers. The few previous studies in Nigeria on ECs among physicians sampled were from varied populations of doctors by different years of graduation, and findings from such studies may be difficult to interpret and generalize for various reasons.^[14,15] First, difference in year of graduation may affect their exposure to medical knowledge and secondly, it

could also lead to recall bias. However, sampling of a cohort of doctors with same year of graduation will provide a more objective assessment of the quality of in-service training received on EC during their medical education. This is believed to have policy and programmatic implications, as lack of comprehensive perspective of health workers might constitute a major barrier to access and eventual uptake of EC in the community. The primary source of information for health care professionals is during in-service training. Similarly, it is assumed that prospective physicians would have received lectures and demonstration on appropriate use of EC as part of their undergraduate medical education. The purpose of this study is, therefore to assess and compare the correct knowledge, attitude, and current use of EC among trainee doctors undergoing internship.

Materials and Methods

This study was a cross-sectional descriptive study conducted among newly graduated medical doctors (MDs) undergoing their mandatory 1-year internship training at the University College Hospital Ibadan between 2008 and 2009 – they are referred to as trainee doctors in this manuscript. During their 1-year mandatory training, the new MDs undergo rotations under the supervision of consultants in four core medical specialty areas – Obstetrics and gynaecology, surgery, medicine, and pediatrics). After this training, they undertake a 1-year national service (National Youth Service Scheme) as medical officers in semi urban and rural communities in the country, where they provide medical services to the entire community including EC.

The sampling frame used for the selection of study participants is the list of all MDs undergoing internship, which was collected from the establishment unit of the hospital. From this register; a systematic random sampling procedure was used to select every third participant. A verbal consent was obtained and thereafter, a self-administered questionnaire was given to those that consented. Of the 250 participants approached, 240 consented (96.0%) and the rest declined due to their busy schedule. Data of 205 out of 240 (85.4%) participants were available for analysis.

The questionnaire captured information on sociodemographic characteristics and relevant information on knowledge, attitude, and use of ECP. Knowledge about indication, the optimal time to prescribe and use, and regimen of ECPs were assessed from responses provided. Specifically questions about the recommended regimen, mode of action and the optimal time of use for three ECPs – Postinor, Yuzpe and IUCD – were asked of the MDs. Items on attitudes concerning the health care personnel to provide EC to patients were enquired and the responses were dichotomous: Agree versus do not agree. There were four such questions each for the opinions of the MDs about doctors, pharmacists, chemists/patient medicine stores, and health centers making ECs available.

The use of any of the available ECs by the MDs was also investigated and current use of EC was taken to be use of any available EC in Nigeria in the last 6 months prior to the interview.

Data were entered and analyzed in SPSS version 15.0 (Chicago, IL, USA). Frequencies and other statistics were calculated and used to summarize variables. Chi-square test was used to determine gender differences in the proportions that knew when to use the ECPs and the regimen. Multiple logistic regression was used to identify factors independently associated with ECP use after initial bivariate cross-tabulations and Chi-square tests. Statistical significance was set at *P* value of less than 0.05.

Results

Of the 205 respondents, two-thirds were males (61.5%), while the rest were females (38.5%). The mean age of the respondents was 27.2 years (standard deviation = 2.1). Majority of the respondents were never married (88.3%), 11.2% were married, and one was a divorcee. Respondents were mostly Christians (82.4%) and the rest were Muslims [Table 1]. All the respondents had heard of EC. The indications for EC identified were rape (96.5%), condom rupture (92.7%), sexually active unmarried women (74.7%), missed pills (69.8%), missed injectable contraceptives (60.0%), and others (15.6%). Majority knew about ECs from medical school (95.5%) and other sources of information mentioned include journals (15.8%), media (14.1%), seminars (11.6%), and the internet (10.6%). Concerning the types of ECs known, postinor was identified as an ECP by 81% followed by IUCD (76.6%), mifepristone (44.4%), Yuzpe (38.5%),

prostaglandin (27.3%), spermicidal jelly (14.6%), vaginal douching (14.5%) and depo provera (14.1%).

Almost half of the respondents (45.9%) and less than a quarter (22.4%) knew the EC regimen for postinor and IUCDs, respectively. Only 3.9% knew the regimen for Yuzpe. The mode of action of ECs was reported as prevention of implantation in 86.6%, preventing fertilization (52.7%), and interruption of pregnancy (16.6%). About 29.8% of the respondents knew the optimal time after sexual intercourse to use the pill, while 39.5% knew the recommended interval between doses. About 22.4% gave correct responses to questions on when to use IUCDs as an EC. There were no significant differences in the proportions who knew the regimens for the three ECs between male and female doctors. A higher proportion of males (95.9%) compared with females (80.0%) knew the mode of action of ECs as regards implantation (*P* = 0.001).

About 70% support EC in Nigeria while about a quarter (26.9%) routinely counsel women about ECP use. A higher proportion of males (77.8%) compared with females (67.1%) support ECP use in Nigeria (*P* = 0.010) (data not shown). A total of 21% agreed that EC should be given to women on request and about a tenth stated that ECs could be used as a regular method. Concerning promotion of EC use, 51.2% agreed that it could lead to a decrease in the use of other more effective family planning methods, 73.7% felt it would encourage unprotected sex while about two-thirds felt it could result in an increase in sexually transmitted infections [Table 2]. Failure (19.0%), bleeding (15.1%), and nausea/vomiting (10.7%) were the major side effects given by the doctors of EC use. Others include acne/weight gain (7.8%), pelvic inflammatory disease (1.5%), headache and breast cancer (2.9%, respectively). On respondents attitude toward EC availability, about half believed EC should be made available only by doctors (48.8%), by pharmacist (16.1%), patent medicine sellers (25.4%), and by health centers (53.7%). There was no statistically significance different between male and female doctors in the attitudes toward who should provide EC for clients.

Table 1: Sociodemographic characteristics of respondents

Variable	Frequency	%
Age		
20-23	5	2.4
24-27	127	62.0
28-31	54	26.3
32-35	9	4.4
Missing	10	4.9
Gender		
Male	126	61.5
Female	79	38.5
Marital status		
Single	181	88.3
Married	23	11.2
Divorced	1	0.5
Religion		
Christianity	166	81.0
Islam	32	15.6
Others	4	2.0
Missing/no response	3	1.5

Table 2: Opinions concerning emergency contraception use

Indication	Percentage (%) (n=205)
Information should only be given to women on request	21.0
EC can be used as a regular method	9.8
EC can help reduce the current high abortion rate in Nigeria	77.1
Promotion of EC can lead to decrease in the use of other more effective family planning methods	51.2
Promotion can encourage unprotected sex	73.7
Promotion of use can result in increase in STI	67.3

EC=Emergency contraception; STI=Sexually transmitted infection

About 21% of respondents currently use EC, and results of cross tabulations and multiple regression analysis of current EC use on sociodemographic factors are shown in Table 3. There was a significantly higher prevalence of use among married (41.7%) compared with single doctors (18.5%), males (28.7%) compared with females (9.3%), and Muslims compared to Christians. Multiple logistic regression analysis revealed significantly higher odds of current EC use among males [odds ratio (OR) = 3.64; 95% confidence interval (CI) OR = 1.31-10.01], Muslims (OR = 3.84; 95% CI OR = 1.59-9.09), and those currently married (OR = 5.26, 95% CI = 1.79-14.29) [Table 3].

Discussion

Opinion of trainee doctors on EC provides opportunity to assess their knowledge of the subject as this may have effect on their professional disposition toward their client. In this study, majority of the respondents had good knowledge of EC indication and side effects. Specifically, the commonest indication mentioned for EC by respondents is following rape. Although rape has been reported in similar studies conducted elsewhere, but the proportion of respondents that mentioned it varied significantly. For example, Oriji and Omietimi^[15] reported that 76% of doctors interviewed mentioned sexual assault unlike the 95.6% in this study. A plausible explanation for the difference is that the population studied is fresh graduates who may still have better recollection of their undergraduate knowledge.

Of the other indications, missed dosage of various methods of modern contraception is another correct indication of EC mentioned. This further attests to the respondents' quality of

knowledge. However, about 75% of respondents mentioned that EC is indicated for "sexually active unmarried women," this is against safe contraceptive policy and practices. The correct contraceptive choice for a sexually active individual that is not in an established relationship should be a method which has a dual protection role such as barrier method. None of the available ECs in Nigeria could prevent both pregnancy and sexually transmitted infection at the same time.

Concerning the available EC methods known by respondents, the commonest method mentioned is postinor followed by IUCD. This is in tandem with other similar studies.^[14,15] It may be due to the availability of these two methods in Nigeria. There is low awareness about mifepristone and Yuzpe (combined oral contraceptive pill). The poor awareness may be due to nonavailability of the mifepristone as an EC method in Nigeria. Vaginal douching reported by some participants in this study is not a known EC method, but there are anecdotal reports that some women believe that washing their private part immediately after unprotected sexual intercourse prevents conception. This superstition could have been the source of their information. Likewise depo provera is not a known EC method even though it a conventional injectable modern contraception.

In general, there is poor knowledge of EC on regimen, optimal time to use any of the methods after unprotected sexual intercourse, and the pattern did not differ significantly across the gender of the respondents except on mechanism of action where a higher proportion of male respondents knew the mechanism of action of ECs. The generally low proportion of respondents who gave correct responses to these items might be due to the quality of teaching methods or lack of adequate attention for the subject in the undergraduate medical education curriculum. One would have expected that knowledge level should be high since participants are fresh graduates from the university.

In spite of EC availability in Nigeria for more than a decade before the study and support for its use in the country, majority irrespective of their gender still feel that EC should be restricted to health facility and only few of the respondents felt that EC should be on the counter without prescription. This contradicts the current policy guidelines for most EC methods implementation, as majority of the commodities are freely available on the counter. It is worrisome that a low proportion of respondents are willing to offer information/counseling for women on EC and also, the fear expressed by the majority that EC use could promote promiscuity and sexually transmitted infection (STI) reduce uptake.

Complete information and counseling as well as a wide choice of modern contraceptives, including EC should be part of a comprehensive program that addresses other sexual and reproductive health needs.^[16]

Table 3: Multiple logistic regression model on relationship between ECP use and sociodemographic variables (only variables with significant association are displayed)*

Variables	Cross tabulation		Multiple logistic regression	
	Prevalence of EC use	Chi-square (P value)	OR	95% CI OR
Marital status				
Married (24)	41.7		5.29	1.79-14.29
Single (181) rf	18.5	6.745 (0.009)	1	
Gender				
Male (126)	28.7	10.373 (0.001)	3.64	1.31-10.08
Female (79) rf	9.3		1	
Religion				
Islam (36)	51.7	17.436 (<0.001)	3.84	1.59-9.09
Christianity (169) rf	16.8		1	

rf: Reference category for the multiple logistic regression. *Age was included as a continuous covariate and there was a statistically significantly higher odds of emergency contraception use with age. CI=Confidence interval; EC=Emergency contraception; OR=Odds ratio

On their personal experience about EC use, about one in five had used postinor and none have used other methods. Although we did not ask for reason why they had not used EC before, probable reasons are as follows: First, some may not have had sexual activity before and second, others may have employed other contraceptive methods such as barrier methods and so on. Third, a reasonable proportion is married and they may not need EC. Predictors of EC use showed that marital status, gender of respondents, and religion are independently associated in the regression model. Specifically, married respondents were more likely to use EC compared with single. A plausible explanation is that single respondents may be using barrier methods for fear of STI and unwanted pregnancy since they are not yet married or it may be due to underreporting by them. On gender of respondent, male doctors were about four times more likely to use ECP compared with their female counterparts. Regarding religion, the observed higher use among Muslim compared with Christians may be difficult to explain due to the following reasons. First, studies have shown that Muslims are more conservative toward modern contraception generally and second, there are other factors such as age, marital status, and sociocultural settings that could potentially explain this finding. More studies especially using qualitative methodologies may provide better insights on the role of religion toward EC use.

Apart from some limitations mentioned, findings from this study need to be interpreted with caution. The tool used was self-administered and this did not allow for verification and probing of responses offered. Second, sexual history was not discussed because of the sensitive nature of the topic as it has a potential of modifying their response. Third, the proportion of those using postinor could have been underestimated because all those that were sexually active were not used as the denominator. This study, however, based the proportion of EC use on all respondents. Despite all these, the study has its strengths. First, use of a population of newly graduated doctors provides a real opportunity to investigate quality of their knowledge, which might be a reflection of the depth of their training on the subject. In addition, assessment of their opinion might also provide a clue to their trainers' during their compulsory internship program on areas to improve and design appropriate strategy.

In conclusion, this study shows that participants do not have a comprehensive knowledge of EC expected of a physician and this limits their professional disposition toward it as a form of contraception. Most key EC policy and implementation strategy were not known. We recommend that a more qualitative teaching methodology be employed

during undergraduate training and at the same time efforts should be put in place to improve their knowledge during their internship on EC and other related health issues to prevent unwanted pregnancy and unsafe abortion.

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How to cite this article: Morhason-Bello IO, Adedokun BO, Mumuni TO, Bello FA, Abdus-Salam RA, Lawal OO, *et al.* Knowledge and use of emergency contraception by medical doctors on internship in a tertiary healthcare facility in Nigeria. *Niger J Clin Pract* 2014;17:431-5.

Source of Support: Nil, **Conflict of Interest:** None declared.