

*Original Article*

**Emergency Contraceptive Pill Knowledge, Attitudes and Dispensing Practices of Pharmacists in Ibadan and Lagos Metropolis, Nigeria**

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**ABSTRACT**

Use of Emergency Contraceptive Pills (ECP) is desirable in Nigeria where there is high rate of unwanted pregnancy. Pharmacists are expected to play important role in promoting use of ECP but few studies have assessed their knowledge, attitude and dispensing practice of this product in Nigeria. A total of 211 randomly selected pharmacists practicing in Ibadan and Lagos metropolis completed a questionnaire that assessed knowledge about ECP, attitude towards this contraceptive and actual dispensing practices. The results showed that the mean age of the respondents was 38.8 ( $\pm 10.9$ ) years. There were more male (57.3%) than female respondents (42.7%). The overall mean knowledge scores for the sample was 8.9 (SD: 2.6) out of 18. No significant difference was found in mean knowledge score of male (9.0) ( $\pm 2.6$ ) and female respondents (8.9) ( $\pm 2.8$ ) ( $p > 0.05$ ). Respondents who had practiced for up to 30 years had significantly higher score (9.1) than those with less years of experience (7.7) ( $p < 0.05$ ). Forty-three percent claimed they had religious or moral (46.9%) objection to dispensing ECP. The majority (79.1%) had ever dispensed ECP whereas 21.9% had never done so. Of the 167 respondents who had ever dispensed, 94.6% had a stock of ECP on the day of their interview. More respondents from Ibadan than Lagos had ever dispensed ECP ( $p < 0.05$ ). More community (80%) than hospital based (60%) pharmacists had dispensed ECP ( $p < 0.05$ ). Only 17.5% of those who had ever dispensed ECP had ever received a formal training on the mode of action of this drug. Although majority had dispensed ECP, their knowledge of the drug is limited. There is need for pharmacists to receive continue education on ECP to enable them serve better the clients who need this service.

**Keywords: Attitude, Dispensing practice, Emergency-Contraceptive-Pills, Pharmacists**

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**INTRODUCTION**

Emergency Contraceptive Pills (ECPs) are hormonal methods which women can use within 72 hours of unprotected sex to prevent unwanted pregnancy. Often referred to as „morning after pill“, the ECP is a pre-packaged dose containing hormone progestin, not intended as regular contraceptive, but recommended for use as a backup in the event of contraceptive failure such as a breakage of a condom (KFF, 2005). Emergency Contraceptive Pills prevent pregnancy by inhibiting or delaying ovulation but cannot interrupt an established pregnancy (Ebuehi *et al.*, 2006). The ECP can prevent unwanted pregnancies attributable to lack or incorrect use of contraceptives, contraceptive failure, or coerced

sex. Effective use of ECP can also reduce the rate of unsafe abortion (Ebuehi *et al.*, 2006). Use of ECP is required in many developing countries where there is high incidence of unwanted pregnancies. According to the World Health Organization (WHO, 2003), each year an estimated 80 million women have unplanned pregnancies and many of these pregnancies are aborted. A large proportion of these women are from Sub-Saharan countries (WHO, 2003).

Emergency Contraceptive Pill was introduced into Nigeria about three decades ago. Despite this long history, both knowledge and use of ECP have remained low. Data from the most recent National Demographic Health Survey (NPC, 2008)

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showed that only 15.4% of survey respondents were aware of ECP and less proportion (2.8%) of sexually active women had ever used it. Some of the reasons for not using ECP include the misconception that it causes abortion (FHI, 2001), cultural, religious objections and fear of side effects (Omo-Aghoja *et al.*, 2009). The side effects reported among users of ECP in Nigeria were mild nausea, vomiting, lower abdominal pains, menorrhagia, headache, dizziness and breast tenderness (Arowojolu *et al.*, 2003). Yet, there is need for increased use of this type of contraceptive in Nigeria where there is high incidence of unwanted pregnancy and unsafe abortion (Bankole *et al.*, 2006; Geidam *et al.*, 2009). Another concern about low use of ECP in Nigeria relates to the fact that many health workers have inadequate knowledge about this contraceptive (Ebuehi *et al.*, 2006). Of 256 health care providers surveyed in Lagos, Nigeria, only one third of those who have heard of the drug knew that it is legal (Ebuehi *et al.*, 2006). Only half of the study cohort knew the correct timeframe for effective use of ECP.

Pharmacists can potentially play significant roles in promoting use of ECP in Nigeria. Pharmacies are an ideal setting for dispensing ECP for four reasons. First, clients who need ECP can purchase it from pharmacies since it is sold as an over-the-counter drug in the country. Over-the-counter access to clients make use of ECP more effective because women can get it as soon as it is needed (Population Report, 2000; Yeatman, 2006). Thus pharmacists and pharmacy shops have a great opportunity to provide access of ECP to women who need them. Secondly, unlike formal public health facilities such as hospitals, pharmacies are more accessible to clients because of flexible hours of operation and are open in evenings and week-ends when most health workers are not available. Thirdly, pharmacies are ubiquitous in Nigeria and serve as first port of call for citizens who practice self-care in the spirit of primary health care (Brieger, 2003).

Finally, pharmacists can educate clients who need ECP by providing educational materials such as brochures as well inserts with prescriptions (Yeatman, 2006). This role is feasible because some pharmacies are known to have private spaces for counseling which makes it easier to provide confidential counseling for ECP clients (Yeatman, 2006). Counseling is a vital component of use of ECP in Nigeria where

Postinor-2, the most common ECP comes in two dosages. In order for pharmacists to fulfill their potential roles in promoting use of ECP, they need to have adequate knowledge and be imbued with a positive attitude towards this type of contraceptive. Studies carried out in Pennsylvania, South Dakota and New Mexico in the USA found out that majority of pharmacies either did not stock or could not fill a prescription to women who needed them (Bennett *et al.*, 2003; Riper and Hellerstedt, 2005; Kristi, 2005). Pharmacy shops not having ECP in stock or filling a prescription could be due to moral or religious reasons.

We are not aware of any study that have investigated pharmacists' Knowledge, Attitudes and dispensing Practices (KAP) on ECP in Nigeria. It is not clear to what extent pharmacists in Nigeria may refuse to dispense ECP to women for moral, religious or other reasons. In this paper, we report the findings from a survey that assessed pharmacists' KAP in Nigeria. Data from this study will be useful for planning appropriate intervention to enable pharmacists fulfill their potential role in promoting ECP in Nigeria.

## **MATERIALS AND METHODS**

### **The Setting**

The study was conducted in Lagos and Ibadan metropolis both of which are situated in South-West, Nigeria. With a population of more than nine million persons, Lagos is the most populous city and is the commercial nerve-center of Nigeria's economy. Until 1992, Lagos was the capital of Nigeria. The metropolitan area occupies a region of an estimated 300 square kilometers and was projected to be one of the world's five largest cities by 2015, the third largest urban city in the world by 2015 (John, 2002). Located 90 miles north of Lagos, Ibadan is the capital of Oyo State with a population of approximately 2.5 million persons. Ibadan is the third most populous city in Nigeria (after Lagos and Kano) and has the largest geographical area in Nigeria.

### **Study Population**

The study populations were trained pharmacists who operated owned-pharmacy shops or were employed by governments and were practicing in hospitals owned by Federal and State governments in Lagos and Ibadan in 2008 when the study was conducted. In Nigeria, the Ministry of Health provides pharmacists with a grade

license which enables them to sell drugs of all categories including prescription and patent medicines (Nigerian Pharmacy Laws, 1946).

### **Instrument for Data Collection**

A 69-item questionnaire was developed and used for data collection. The questionnaire was designed to be self completed and structured into four sections for ease of administration. The sections are demographic information, knowledge of ECP, attitudes toward ECP, and reported dispensing practices. To assess respondents' knowledge, the researchers formulated 18 statements on the mechanism of action of ECP derived from literature review. Respondents were requested to determine whether each of the 18 statements is either 'True' or 'False'. A sample of the statements read 'use of ECP reduces pregnancy risk by at least 75%' and 'ECP effectiveness is optimal when used within 24 to 48 hours of unprotected sexual intercourse'. Respondents attitude towards dispensing ECP was explored by formulating 16 statements using the Likert scale of options of 'agree', 'disagree' or 'not sure'. Sample of the statements include 'ECP should only be given in the case of rape and incest' and 'ECP should be available over the counter without prescription'. Fifteen questions were posed to assess practices including whether respondents had ever dispensed ECP, if they did so during the week preceding the survey, the brands of ECP dispensed, if they had ever been trained and whether their pharmacies had a private place for counseling clients who requested for ECP, among others. A draft of the questionnaire was field-tested and revised before it was used for data collection.

### **Recruitment Procedures**

In both Lagos and Ibadan all registered pharmacists who own drug stores and those who worked in private and government owned facilities were identified through a review of census documents obtained from the Ministries of Health and from the States Pharmacy Associations in the two cities. This list was used to determine the sampling frame. In Ibadan, the census figure showed that there were 268 registered pharmacists. However, a physical enumeration of the locations of the pharmacy shops revealed there were actually 252 on ground. All of these 252 persons were contacted and invited to participate in the survey. Only 240 accepted the questionnaire. Of these, 192 (80%) returned it. In Lagos, the review of the register showed that there were 642 pharmacists. A systematic

selection of every fifth individual on these lists was used to select 192 respondents who were given a questionnaire to complete. Only 66 (34%) returned the completed questionnaire. Each respondent was informed about the purpose of the study, that the data collected will be used for research purposes only, and that participation in it was voluntary. We assume that those who returned their questionnaires provided informed consent.

### **Data Analysis**

The data were checked for completeness and accuracy in the field. Open-ended questions were coded and later the data were entered into the computer. Analysis was performed using Statistical Package for Social Sciences. Data on knowledge was analyzed by assigning a point to each correct answer provided by the respondents. This resulted in an 18-point ECP knowledge score, with 0 being the lowest and 18 the highest. With respect to attitude, two points were awarded to each of the 8 statements. A respondent who 'agreed' to a positive attitudinal statement was given one point while no point was awarded to a respondent who 'disagreed' or was 'not sure'. Those who disagreed with a negative statement were given a score while those who agreed or were not sure were given no score. This resulted in a 16-point attitudinal score with 16 being the maximum and 0 being the minimum. Thus, the higher the score on the attitudinal scale the more positive one's attitude toward ECP. Questions on practices were described in proportions and percentages. The chi-square was used to compare mean knowledge scores.

## **RESULTS**

### **Demographic Profile**

The demographic profile of the respondents is shown in Table 1. Respondents' ages ranged from 22-72 years with a mean of  $38.8 \pm (10.92)$  years, with more males (57.3%) than females (42.7%). Majority of the respondents were of Yoruba ethnic group (89.1%), followed by Ibos (5.7%) and most were Christians (75.4%). Seventy-six percent were married and only 21.8% were single. Approximately 72% of the respondents practiced in pharmacies, 28% in hospitals and most (65.9%) had bachelor degrees while 21.3% had Master's degrees.

### **Knowledge about ECP**

Respondents overall mean knowledge score was  $8.9 \pm 2.63$ . The mean knowledge scores for the respondents when compared by some demo-

graphic variables are shown in Table 2. Although pharmacists in Ibadan had slightly higher mean scores (9.0) than their counterparts from Lagos (8.9), the difference between the two is not statistically significant ( $p>0.05$ ). However, pharmacists aged less than 40 years had significantly higher mean knowledge (9.6) than those older (8.7) ( $p<0.05$ ). No significant difference was found when knowledge was compared by sex, years of practice, educational qualifications and setting of practice as shown in Table 2.

**Table 1: Socio-Demographic Characteristics of Survey Respondents (211)**

Characteristics	No	%
<b>Sex</b>		
Male	121	57.3
Female	90	42.7
<b>Ethnic group</b>		
Hausa	1	0.5
Yoruba	188	89.1
Igbo	12	5.7
Others	10	4.7
<b>Marital Status</b>		
Single	46	21.8
Married	160	75.8
Others* *	3	1.4
No response	2	0.9
<b>Educational Qualification</b>		
Bachelors degree	139	65.9
Masters degree	45	21.3
Doctoral degree	5	2.4
Others***	19	9.0
No response	3	1.4
<b>Religion</b>		
Christianity	159	75.4
Islam	48	22.7
Traditional	1	0.5
Others	1	0.5
No response	2	0.9
<b>Place of Practice</b>		
Hospital	60	28.4
Pharmacy	151	71.6
<b>Primary Position</b>		
Staff	80	37.9
Manager/ Supervisor	72	34.1
Owner	54	25.6
Others	5	2.4

**Note:** \*\* Widow or Widower, \*\*\* Secondary School Certificate, Other Professions

### Attitude towards Dispensing ECP

A higher percentage (84.8%) of respondents "agreed" to the statement that ECP are more accessible to clients in pharmacy shops than in other health facilities; 18.2% disagreed. Eighty-five percent 'agreed' that it was their professional responsibility to counsel clients before dispensing ECP, 15% 'disagreed'. More than half (55.5%) said they would refer clients to other pharmacists to dispense ECP, 45.5% disagreed. Slightly more than half of the respondents (52.1%) agreed that

they needed formal training to enable them correctly dispense ECP and 26.5% disagreed. On whether the use of ECPs would decrease adherence to regular contraception, 46.0% agreed, 37.4% disagreed and 16.7% were not sure. A total of 46.9% pharmacists said they did not have moral objection to dispensing ECPs, 38.9% said they did while 14.2% did not respond. When asked about their religious beliefs, 41.2% said they had religious objections, while 58.8% did not. The overall mean attitude of the respondents was 8.7 ( $\pm 2.7$ ) out of 16. The mean attitude score of pharmacists aged 31-40 years is superior (9.6) to those younger (21-30 years) (7.9) and those older (41-50 years)(8.8). Although males had higher mean attitudinal score (8.8) than female (8.6), the difference was not significant ( $p>0.05$ ) (Table 3).

**Table 2: Respondents' Knowledge on Emergency Contraceptive Pills by Sex, Location, Age Group, Years of Practice and Educational Qualifications**

Demographic Variables	No	Mean	S.D	P-value
<b>Sex</b>				
Male	121	9.0	2.6	0.729
Female	90	8.9	2.8	
<b>Location</b>				
Ibadan	145	9.0	2.7	0.440
Lagos	66	8.9	2.5	
<b>Age in Group</b>				
21-30	57	9.1	2.6	0.018
31-40	81	9.6	2.3	
41-50	39	8.2	2.7	
51-60	26	8.7	3.1	
61 and above	8	6.8	2.8	
<b>Years of Practice</b>				
1-10	119	9.3	2.5	0.89
11-20	45	9.1	2.6	
21-30	34	8.5	3.0	
31-40	11	7.1	2.5	
41-50	2	9.0	0.0	
<b>Total</b>	211	8.9	2.6	
<b>Educational Qualification</b>				
Bachelor degree	139	8.9	2.5	0.87
Master degree	45	8.9	3.1	
Doctoral degree	5	10.0	2.7	
Others	19	9.1	2.7	
<b>Setting of Practice</b>				
Hospital	60	9.3	2.6	0.19
Pharmacy shops	151	8.3	2.7	

### Dispensing Practices of ECP

The majority of the respondents (79.1%) reported that they had ever dispensed ECP, 28.9% had never. Of the 167 who had ever dispensed ECP, 94% did so during the week preceding the survey, 6% did not. The trade names of the ECP that pharmacists had dispensed in the week preceding the survey were Postinor 1, Postinor 2,

Microgynon and Nordetta in this order of frequency. The majority (70.6%) of those who dispensed ECP during the preceding week also had ECP in stock as at the time of the survey, and 29.6% did not. However, only 27.0% that had ever dispensed ECP had a private place suitable for counseling clients who needed this contraceptive. A large majority (64.7%) reported that they counseled the last client to whom they sold an ECP, 35.3% had not. When asked whether ECP were dispensed on request or prescription, all the pharmacists who had ever dispensed ECP reported that this drug was sold to client on request, i.e. the sale was not based on a prescription from a health worker. The proportion that had ever dispensed ECP by sex, location of practice and setting is shown in Table 4. Significantly more (77.4%) pharmacists in Ibadan had ever dispensed ECP than their counterparts from Lagos (69.4%) ( $p < 0.05$ ). Similarly, a significantly greater proportion of community pharmacists had ever dispensed ECP than hospital-based pharmacists ( $p < 0.05$ ).

**Table 3: Pharmacists' Attitude towards ECP by Sex, Location, Age, and Years of Practice**

Demographic Variables	No	Mean	S.D	P-value
<b>Sex</b>				
Male	121	8.8	2.7	0.47
Female	90	8.6	2.8	
<b>Location</b>				
Ibadan	145	8.9	2.8	0.11
Lagos	66	8.4	2.5	
<b>Age in Group</b>				
21-30	57	7.9	2.6	0.00
31-40	81	9.6	2.3	
41-50	39	8.8	3.3	
51-60	26	8.2	2.7	
61 and above	8	7.4	2.4	
<b>Years of Practice</b>				
1-10	119	8.6	2.5	0.08
11-20	45	9.7	2.6	
21-30	34	8.7	3.0	
31-40	11	6.6	2.5	
41-50	2	7.6	0.0	
<b>Educational Qualification</b>				
Bachelor degree	139	8.8	2.6	0.54
Master degree	45	8.4	2.9	
Doctoral degree	5	10.0	2.0	
Others	19	9.1	3.2	
<b>Setting of Practice</b>				
Hospital	60	8.7	2.7	0.8
Pharmacy shops	151	8.8	2.7	

Approximately 61% of pharmacists agreed with the statement "pharmacists need training before

pharmacists can adequately dispense EC" but only 17.5% had ever received any such formal training. However 65.9% signified their intention to participate if such training was available. Nearly three-quarters of the respondents (73.5%) said they were comfortable dispensing ECPs to clients who consult with them, 26.5% were not. A positive relationship was found between ECP dispensing practices and attitude towards this product. Of 167 pharmacists who had ever dispensed ECP, 89.2% held more positive attitude (9.2) than their counterparts (44) who had never done so not (7.8) ( $p < 0.05$ ).

**Table 4: Pharmacists' Dispensing Practices of ECP by Sex, Age, Location and Setting of Practice**

Demographic Variables	Ever Dispensed ECP		X2	p-value
	Yes	No		
<b>Sex</b>				
Male	95	26	1.48	0.47
Female	57	24		
<b>Location of Practice</b>				
Lagos	106	31	6.89	0.03
Ibadan	43	19		
<b>Setting of Practice</b>				
Hospital	36	24	21.76	0.00
Community	117	28		

## DISCUSSION

Although pharmacists require adequate knowledge on ECP in order to serve clients who need this product, the results of our survey showed that pharmacists had average knowledge and understanding of this contraceptive having scored 8.9 out of 18. This result is in line with the results reported by Ebuehi and colleagues (2006) who found out that only 24% of health care providers had good knowledge of emergency contraceptive in Lagos, Nigeria. A similar result was reported by Riper and Hellerstedt (2005) who found that 37% of pharmacists in South Dakota (USA) did not know that ECP and oral contraceptives pills have similar mechanism of action. The possible explanation is the fact that only few had ever received a formal training on the mechanism of action of ECP. Although knowledge about ECP was low, younger pharmacists generally had superior knowledge of ECP than older counterparts. This may be due to the fact that younger professionals are more likely than older ones to participate in continue education programs including conferences, workshops and seminars.

Despite inadequate knowledge of ECP, a large majority of the survey respondents had ever

dispensed and were currently dispensing ECP to their clients. Similar findings have been reported by other researchers in Nigeria (Ebuehi *et al.*, 2006) including Fayemi and colleagues (2010) who reported that a high number of patent medicine vendors also sell ECP to clients. This finding strengthens the widely held notion that pharmacists can and should play important role in promoting ECP due to the flexibility of their hours of operation and the fact that they are readily accessible to clients since pharmacy shops are ubiquitous in Nigeria. The fact that a large majority of the pharmacists had ECP in stock on the day they were interviewed is a reflection of the demand for this service and their response to the needs expressed by clients (Kelly, 2005; Dianna *et al.*, 2006). The implication is that there is growing awareness of the existence of ECP and people's willingness to use it. However, there is concern that only few respondents had suitable places in their pharmacy to provide the required private and confidential counseling and education that clients would need to take ECP as recommended by the manufacturer. The pharmacists may assume that clients would know a lot about the drug since ECP is an over-the-counter drug. Unfortunately, lack of counseling on ECP may result in inappropriate use which in turn may undermine the effectiveness of the drug.

Two factors explain the result that more community-based pharmacists (CBP) had dispensed EC than their counterparts working in hospitals. First, CBP have more access to women/girls and drugs because they are community-based.

Community-based pharmacists have more flexible hours of operation than hospitals which typically open between 8am and 4pm on week days. Secondly, CBP are more likely than government-owned hospitals to respond to needs of clients since the former are private initiative for profit-making. The findings of this study have programmatic implications. We recommend two interventions that would address the needs identified in this study. Given the fact that unwanted pregnancies is common in the country (Bankole *et al.*, 2006; Geidam *et al.*, 2009), there is need to promote use of ECP using social marketing and the mass media. Secondly, there is need to train pharmacists on ECP since they are likely to continue to remain the first port of call for clients who demand for ECP after unprotected sex. This training program can be organised through the various pharmacy associations at the state levels as part of their continue education.

Relevant information on ECP should also be included in the existing training curricular for pharmacists in Nigeria. Government and other international authorities need to take advantage of pharmacists' willingness for improvement through training to develop and implement programs to educate them on ECP.

This study has two limitations which must be acknowledged. First, the sample size in this study is relatively small therefore the findings may not represent the situation of KAP of ECP among all pharmacists in Oyo or Lagos state, let alone the whole of Nigeria. Second, pharmacists provided self-reported information about dispensing of ECP. This may be subjected to reporting errors since there is no objective means of verifying this information such as review of records. Nevertheless, the study has made important contributions to what is currently known about pharmacists knowledge and dispensing practices of ECP in Nigeria. It has also identified areas of need for appropriate interventions that would make pharmacists serve better their clients who require ECP.

## CONCLUSION

Emergency Contraceptive Pills is an important contraceptive option in Nigeria where the incidence of unwanted pregnancies is high. As awareness about ECP grows in Nigeria, the demand for and use of ECP are likely to continue to increase in the country. Pharmacists are likely to continue to play important roles in providing ECP to those who need it to prevent unwanted pregnancies because of their flexible hours of operation and the fact that pharmacy shops are closer to the people than many health care facilities. Pharmacists have inadequate knowledge about ECP would require training if they are to reach their full potential as promoters of ECP. A training program is recommended to enable pharmacists dispense ECP and appropriately counsel their clients who desire it to ensure its effectiveness. If ECP are used effectively by those who have unprotected sex, it would contribute to the reduction of the high rate of unwanted pregnancies and their complications in Nigeria.

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