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Research Article

## Knowledge, attitudes and perceived barriers to emergency contraception among health staff in a tertiary hospital in Yaounde, Cameroon

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### ABSTRACT

**Background:** Unsafe abortion is a scourge worldwide. In Cameroon, modern contraceptive prevalence is 16%, with unmet need of 25%. Knowledge and attitudes of health staff toward emergency contraception (EC) are unknown. The aim of this study was to assess knowledge, attitudes of health staff towards EC and determine barriers they perceived to its popularization.

**Methods:** A descriptive cross-sectional study was carried out in a tertiary Hospital from April 1, to June 30, 2015 on a convenient sample of 150 health workers. All the staff present in the facility on the day of the survey was eligible. A pre-tested and anonymous questionnaire was distributed to 150 health staff. Data were analyzed using SPSS® software.

**Results:** The response rate was 78.7% (118/150). Mean age was  $34.7 \pm 8.8$  years and 94.9% (112/118) of respondents were Christians. The mean number of children per respondent was  $2.5 \pm 1.6$  and the mean duration of professional experience was  $6.9 \pm 6.6$  years. Eighty nine (75.4%) respondents were women and sixty (50.8%) were nurses. Awareness was good (87.5%), but knowledge was insufficient for 44.1% (52/118) and poor for 11.9% (14/118) of respondents. Attitudes towards EC were appropriate for 44.6% (46/103) of respondents. Eighty percent of respondents were not satisfied with their knowledge and 90.4% requested training on EC. Perceived barriers were: promotion of precocious (82.9% of respondents) and unprotected (75.4%) sex, side effects (70.6%), liability (47.7%) and ethical/religious (42.2%) principles.

**Conclusions:** Knowledge and attitudes of health staff towards EC was inadequate. Promotion of precocious and unprotected sex was the main perceived barrier to EC. Health staff needs training on EC.

**Keywords:** Emergency Contraception, Knowledge, Attitudes, Barriers, Health Staff, Cameroon.

## INTRODUCTION

Worldwide, despite contraception, 41% (85 280 000) of the 208 000 000 yearly registered pregnancies are unintended. As a result, the need for abortion is high but access to legal and safe abortion is very poor in resource-limited countries. Nineteen million unsafe abortions occur worldwide each year resulting in 70000 deaths of women.<sup>1-4</sup>

In Cameroon, the overall contraceptive prevalence (modern methods) is 16% and the unmet need for family planning methods is 17%. Legislation on abortion is very restrictive. Terminations of pregnancies are therefore usually carried out by unskilled persons in inappropriate environment leading to severe complications including death. Emergency Contraception (EC) can therefore be a solution if it is widely used. Indeed, EC has been shown to reduce the number of unintended pregnancies and is promoted by the United Nations Population Fund, the World Health Organization, and the International Federation of Gynecology and Obstetrics. To the best of our knowledge there is no published data on the prevalence of EC in Cameroon; but it is certainly very low like that of “classical” contraception. The 2011 National Demographic and Health survey revealed that only 32.5% of women and 33.5% of men of reproductive age know the existence of emergency contraceptive pills. This is unacceptably low, but awareness and use of EC in the general population reflects the knowledge, prescription practices and attitudes of health staff towards EC. Knowledge and behaviour of health personnel towards EC have not yet been assessed in Cameroon.<sup>5-7</sup>

The term “Emergency Contraception” (EC) refers to a group of methods used to avoid pregnancy after unprotected sexual intercourse. EC is sometimes inappropriately referred to as “post-coital” and “morning-after” contraception.<sup>9</sup>

EC encompasses the following methods.

1. Copper intra-uterine device (IUD) which is effective up to seven days after intercourse.
2. Levonorgestrel (LNG) emergency contraception regimens that can be effective up to 5 days after intercourse (the single dose regimen (1.5 mg) and the double dose levonorgestrel regimen (0.75 mg 12 hours apart).
3. Ulipristal Acetate (UPA) which is effective up to 5 days after intercourse (single dose of 30 milligrams).
4. Mifepristone (at much lower doses than for induced abortion 10 – 60 milligrams) that is effective up to 5 days after intercourse.
5. The Yuzpe’s method (Combined oestrogen-progesterone pill) which is effective up to three days after the intercourse.<sup>10-12</sup>

Levonorgestrel is the only emergency contraceptive pill licensed in Cameroon, but it is not available over-the-counter.

The goal of this study was to determine the current knowledge and attitudes of health staff (nurses, medical doctors and laboratory staff/biologist) towards EC and to determine (perceived) barriers to its use.

## METHODS

### *Study design and participants*

We conducted a cross-sectional and descriptive study from April 1, 2015 to June 30, 2015 at the Yaounde Central Hospital (YCH). The YCH is a tertiary and teaching Hospital that serves as referral health facility for Cameroun and other central Africa countries. The former paediatric department is currently entirely autonomous and independent from the management team of the YCH. All the health personnel present in the hospital on the day of the survey were eligible for the study.

### *Data-collection procedure*

Data were collected on a structured pre-tested and pre-coded 36-item self-applied questionnaire. Health Staff who gave consent received a hard copy of the questionnaire. They were asked to deposit their answers at the secretariat of their unit where the main investigator then collected the filled out questionnaires. The questionnaire had four sections. The first section consisted of socio-demographic characteristics: age, sex, number of living children, department, qualification, marital status, religion and the number of years of professional experience. The three remaining sections retrieved information on knowledge, attitude and perceived barriers to EC. Questions in those sections were designed using a matrix of dimensions that is described in Table 1. Data were compiled on an excel sheet.

### *Ethical requirements*

Prior to the survey, an ethical clearance was obtained from the Regional Committee for Ethics in Human Health Research (N°CE001/CRERSHC/2015). An authorization (N° 834 L/MINSANTE/SG/DHCY/CM) was also obtained from the director of the YCH. Informed consent and confidentiality were also ensured.

### *Statistical analysis*

Our convenient sample size was 150. We used Microsoft Excel® (version 2010) software for data entry. Statistical analysis was done using the Statistical Package for Social Sciences (SPSS) software programme (version 12.0, Chicago, IL, USA). For descriptive statistics, results were expressed in terms of proportions or percentages and means (standard deviation). The scoring system used to appreciate knowledge and attitudes is described in Table 2.<sup>13</sup>

**Table 1: Matrix of dimensions.**

Dimensions	Components	Variables
<b>Knowledge of EC</b>	EC	- Awareness of EC
	Side effects of EC	- Knowledge of the absence of causal relationship between EC and abortion
		- Knowledge of the main side effect of the Hormonal emergency contraceptive pill
	Prescription of EC	- Knowledge of the fact that pregnancy test is not necessary before prescribing EC
	Methods of EC	- Knowledge of the Yuzpe's Method
		- Knowledge of Levonorgestrel EC pill
		- Knowledge of Mifepristone EC pill
		- Knowledge of Ulipristal acetate EC pill
	Efficacy of EC	- Knowledge of Intra Uterine Device as a method of EC
		- Knowledge of the delay of efficacy of the EC pill, after sexual intercourse
- Knowledge of the delay of efficacy of EC methods after sexual intercourse		
<b>Attitudes towards EC</b>	Promotion of EC	- Knowledge of the mean percentage of efficacy of EC
		- Risk / benefit balance of EC
		- Systematic counselling on EC during routine consultations
		- Effect of EC on the prevalence of "classical" contraception
	Training on EC	- Necessity to intensify/start sensitization on EC
		- Having done a further training on EC
		- Satisfaction with their knowledge of EC
	Prescription of EC	- Willingness to follow a specific training on EC
		- Ever prescribed EC
		- Systematic referral of patients to obstetrician/Gynaecologist for EC
<b>Barriers to EC</b>	Perceived barriers to EC	- Promotion of precocious sex
		- Promotion of unprotected sex
		- Ethical/religious considerations
		- Medicol-legal considerations
		- Lack of professional experience/ self-confidence
		- Fear of side/malformative effects
- Poor access/availability of EC		

EC: Emergency Contraception

## RESULTS

### Participation rate

Out of the 150 health workers who accepted to participate, 118 returned the questionnaire, giving a response rate of 78.7%.

### Socio-demographic characteristics of respondents

Table 3 shows socio-demographic data of the respondents. The mean age of respondents was  $34.7 \pm 8.8$  years (range 19 - 54). The mean number of living children per respondent was  $2.5 \pm 1.6$  (range 1 - 7). The mean duration of professional experience was  $6.9 \pm 6.6$

years (range 1 - 28). 112 (94.9%) respondents were Christians, 52 (44.1%) were formally married and 89 (75.4%) were female. Sixty (50.8%) respondents were nurses and 38 (32.2%) were working in the department of obstetrics/Gynecology.

### Knowledge of EC

Appreciation of Knowledge of respondents towards EC is shown in table 4. Globally, 44.1% (52 out of 118) of respondents had insufficient knowledge and 11.9% (14 out of 118) had poor knowledge of EC.

**Table 2: Scoring system for appreciation of knowledge and attitudes.**

Score (proportion of correct answers)	No of correct answers in "Knowledge"	Appreciation of "Knowledge"	Number of correct answers in "attitudes"	Appreciation of "attitudes"
0-25%	0 to 3	Poor	0 to 2	Poor
26- 49%	4 to 6	Insufficient	3 to 5	Inadequate
50-70%	7 to 9	Average /Quite good	6 to 7	Acceptable /Quite good
71-100%	10 to 13	Good	8 to 9	Good

Specifically 87.5% of respondents were aware of EC and 90.1% of them know that emergency pill was a mean of EC. 22% and 12.2% of respondents knew that EC was possible with copper Intra-Uterine Device (IUD) and Ulipristal acetate respectively. 64% of respondents know that mifepristone could be used as EC and 39.3% of respondents knew that combine oral contraceptive (Yuzpe's method) could be used for EC. 46% of respondents thought that EC was a method of abortion. For 45.5% of respondents EC pill was effective only within the 24 hours after sexual intercourse and for 50% of respondents a pregnancy test must be done prior to EC. For 76.1% of respondents menstrual disturbance was the commonest side effect of EC pill. The mean percentage of efficacy of EC was not known by 69.8% of respondents.

#### **Attitude towards EC**

Appreciation of attitudes of respondents towards EC is shown in Table 4. Globally, attitude towards EC was appropriate for 44.6% (46 out of 103) of respondents.

Specifically, 53.9% of respondents had already prescribed EC and 65.2% thought that its benefits don't outweigh the risks. 80.5% of respondents were not satisfied with their level of knowledge on EC and 90.4% of them wished to be trained on EC. Only 56.3% of participants answered that EC should be promoted.

#### **Perceived barriers to EC**

These barriers are shown in Table 5. For 82.9% of respondents EC promotes unprotected sex and for 75.4% of them EC promotes precocious sex. For 70.6% of respondents fear of side effects was an obstacle to EC.

## **DISCUSSION**

#### **Awareness of EC**

Awareness of EC was high (87.5%) in our sample but more than half of our respondents had inappropriate (either poor (11.9%)) or insufficient (44.1%)) level of

knowledge of EC. This is similar to the findings by: Gichangi et al among nurses in Kenya,<sup>14</sup> by Morhason-Bello et al among junior medical doctors in Nigeria,<sup>15</sup> by Reed et al among nurses and physicians in the USA,<sup>16</sup> by Abdulghani et al among health staff in Pakistan, by Aksu et al in Turkey and by Oriji et al among medical doctors in Nigeria.<sup>17-19</sup> On the contrary, the following authors found an adequate level of Knowledge of EC: Najafi-Sharjabad et al, among health staff in Iran , Weisberg et al among General Practitioners in Great Britain and Nivedita et al among nurses in India.<sup>20,21</sup> Awareness of EC in our sample was certainly high because respondents were working in a referral and teaching Hospital in the capital of the country where information technologies favour learning and self-training. Moreover, all our respondents had at least one living child. For their own family planning they may have heard about EC.

#### **Knowledge of EC**

Concerning knowledge of EC, the overall score of our sample was poor because it was made up of 50.8% of nursing personnel and only 28% of physicians who are supposedly more knowledgeable of EC. Moreover, respondents working in emergencies and in the unit of Obstetrics and Gynaecology accounted for only 43.2% of our sample while those working in other units are less likely to deal regularly with patients requiring EC. Overall knowledge score was low despite the fact that young health workers (less than five years of experience) who are supposed to have better mastery of concepts taught in professional schools accounted for more than half of our sample (51.7%). This indicates that teaching curricula in our professional schools may not emphasize on EC. Health staff has considerable influence of women's contraceptive behavior.<sup>11,20,21</sup> Thus, our finding of weak knowledge of EC correlates with the poor national contraceptive prevalence and with poor knowledge of EC among university students.<sup>6,23</sup> A last, another possible explanation of inadequate knowledge despite high awareness of EC may be the fact that the majority of our respondents were Christians (94.9%). Christian Religions are strongly opposed to EC and religion has been shown to influence knowledge and prescription of EC by health personnel.<sup>15,24</sup>

**Table 3: Socio-demographic characteristics of respondents.**

Characteristics	Frequency	Proportion (%)	
Age (years)	18 – 30	46	39,0
	31 – 45	57	48,3
	46 – 60	15	12,7
	≥ 61	0	0,0
	Total	118	100,0
Sex	Female	89	75,4
	Male	29	24,6
	Total	118	100,0
Marital status	single	54	45,8
	Married	52	44,1
	NA	5	4,2
	Widow(er)	7	5,9
	Total	118	100,0
Number of living Children	0	0	0,0
	1 – 3	88	74,6
	4 – 5	24	20,3
	≥ 6	6	5,1
	Total	118	100,0
Qualification	Biomedical staff	18	15,3
	Nurse	60	50,8
	GP	16	13,6
	Resident doctor	17	14,4
	NA	7	5,9
	Total	118	100,0
Professional experience (years)	0 – 5	61	51,7
	6 – 15	47	39,8
	≥ 16	10	8,5
	Total	118	100,0
Unit/Department	Paraclinical Units	27	22,9
	Surgery	13	11,0
	Obstetrics/Gynecology	38	32,2
	Internal Medicine	25	21,2
	NA	2	1,7
	Emergencies	13	11,0
	Total	118	100,0
Religion	Christianism	112	94,9
	Islam	2	1,7
	NA	4	3,4
	Total	118	100,0

NA: Not available GP: General Practitioner

9 out of 10 respondents knew about EC pill which is the most popular EC method worldwide.<sup>11</sup> Though IUD is the most effective method of EC, only 22% of respondents knew that it could be used for EC.<sup>11</sup> Use of IUD as a method of EC is a very specific knowledge that could be peculiar to physicians (28% of our sample) and/or health staff working in units of Obstetrics and Gynaecology (32.2% of our respondents). A study among medical doctors in Nigeria found that IUD was the commonest method they used for EC.<sup>19</sup> Ulipristal acetate which is not licensed in Cameroon was recognised as a method of EC

by only 12% of our respondents. Mifepristone is not licensed in Cameroon because it is still considered as an abortifacient but 64% percent of respondent identified it as a method of EC. This is in accordance with the proportion (46%) of respondents who considered EC as a method of early abortion. Gichangi *et al* had similar findings (49%) among nurses in Kenya.<sup>14</sup> In fact low doses of Mifepristone are licensed for EC in a small number of countries like China, Russia, Vietnam and Armenia.<sup>11</sup> Almost half (45.5%) of our respondents did not know that EC pill can be effective more than 24

hours after intercourse. This may be due the popular but inappropriate name “morning-after pill” which was even used during the 2011 national Demographic and Health Survey.<sup>6,9</sup> Nivedita *et al* and Gichangi *et al* had similar findings among nurses in India and in Kenya

respectively.<sup>14,22</sup> Menstrual disturbance was (wrongly) identified by 76.1% of respondents as the commonest side effect of EC pills instead of nausea and vomiting that may reduce efficacy.<sup>11</sup>

**Table 4: Knowledge and attitudes of respondents towards emergency contraception.**

Appreciation		Frequency	Proportion (%)
Knowledge	Poor	14	11,9
	Insufficient	52	44,1
	Average / Quite good	48	40,7
	Good	4	3,4
	<b>Total</b>	<b>118</b>	<b>100,0</b>
Attitudes	Poor	8	7,8
	Inadequate	49	47,6
	Acceptable / Quite good	26	25,2
	Good	20	19,4
	<b>Total</b>	<b>103</b>	<b>100,0</b>

#### *Attitudes towards EC*

Half (44.6%) of our participants had adequate attitude toward EC and half (53.9%) of them had already prescribed it. This proportion seems high for a resource-limited country like Cameroon but our survey was carried out in a tertiary and teaching hospital in the city capital. Nivedita *et al* (51.4% of nurses had good attitudes) and Najafi-Sharjabad *et al* (50% of health staff had good attitudes) had similar findings in India and Iran respectively.<sup>20,21</sup> Apart from that, 75.4% of our respondents were women and 44.1% were married.

Gender (female health workers have better attitudes than males) and marital status have impact on knowledge and behaviour of health workers.<sup>15,21</sup> 8 out of 10 respondents were not satisfied with their knowledge of EC and 9 out of 10 wished to receive specific training in EC. Asku *et al* and Nivedita *et al* had similar findings.<sup>18,22</sup> This expresses the need in further training of health staff on EC for the country where family planning is a strategic axis for reduction of maternal mortality. It has been shown that health personnel who had been trained on EC were more likely to prescribe and promote it.<sup>18</sup> Only 56.3% of our respondents were favourable to promotion of EC. Gichangi *et al* had a similar proportion in Kenya (53%).<sup>14</sup> Again, the mean number of children per respondent ( $2.5 \pm 1.6$ ) and the huge proportion of Christians (94.9%) in our sample may be an explanation.

#### *Perceived barriers to EC*

For most of our respondents, the main barriers to EC was the fact that it promotes precocious sexual activity among adolescents (82.9%) and unprotected sex (75.4%) in the era of HIV/AIDS (Human Immunodeficiency Virus/Acquired Immuno-Deficiency Syndrome). In a

series among family physicians in Pakistan, Abdulghani *et al* found that 31% thought that EC was not wide-spread because it “increases promiscuity”.<sup>17</sup> In USA Miller *et al* found that nurses commonly expressed opinions that adolescents who need EC are irresponsible and that EC should only be used after an assault.<sup>11,25</sup> Lack of experience in prescribing, was perceived as a barrier to EC by 56.1% of respondents and 47.7% thought that liability was also a barrier. Given that 46% of respondents consider EC as a method abortion which is still illegal in Cameroon it is understandable that almost the same percentage was concerned with liability.<sup>7</sup> Abdulghani *et al* found similar figures.<sup>17</sup> Ethical/religious principles were barriers to EC for 42.2% of our respondents. These finding appears like the consequence of the high proportion of Christians in our sample (94.9%). In another setting were a majority of respondents were practicing believers, findings were similar.<sup>17</sup> Another remarkable finding is that 31.8% of respondent estimated that EC was neither available nor accessible in the country. In fact Ulipristal acetate and Mifepristone are not licensed in Cameroon. Though Levonorgestrel is marketed over-the-counter, it is not available, accessible and affordable all over the country.

#### *Impact of the study*

To the best of our knowledge, this study is probably the first to assess knowledge and attitudes of health staff towards EC in Cameroon. It has revealed important deficiencies in knowledge and attitudes towards EC among health staff. It has yielded a glance of the barriers to EC as perceived by health staff. If our results are confirmed, specific training of health staff on EC will be necessary to ensure it effectiveness in the community. It has also thrown more light on this subset of contraception.

**Table 5: Perceived barriers to emergency contraception**

Perceived barriers to EC	Frequency / total number of responses	Proportion (%)
EC promotes unprotected sex	97 / 117	82.9
EC promotes of precocious sex	86 / 114	75.4
Fear of side effects and/or teratogenicity of EC	77 / 109	70.6
Lack of experience in prescribing EC	64 / 114	56.1
Liability of the prescriber	53 / 111	47.7
EC is wrong for ethical/religious reasons	49 / 116	42.2
EC is neither available nor accessible	35 / 110	31.8

EC: Emergency Contraception

### **Limitations and perspectives**

The main limitation of our study is that all categories of health staff were included but the relatively small sample size that didn't permit subclass analysis. Another limitation is that no similar study conducted in Cameroon was found for comparison. Our sample was made up of 94.9% of Christians and thus failed to give an insight of the situation among health staff from other religions. Our study was limited to one health facility and it may not be generalized.

Further research may be carried out on a larger scale among each category of health personnel in both referral and primary health care.

### **CONCLUSIONS**

This survey revealed that knowledge and attitudes of EC were inadequate among health staff in a tertiary and teaching Hospital in Cameroon. The main barriers to EC perceived by respondents were socio-cultural. Most of the participants requested further training in order to overcome those barriers in order to fully implement EC in community.

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