Evaluation of emergency contraception use among women receiving gynecological treatment in the Brazilian Amazon

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ABSTRACT

INTRODUCTION: The use of a postcoital hormonal contraception regimen has been described and is known as emergency contraception (EC) or "the morning-after pill". The aim of this study was to evaluate the use and level of knowledge about emergency oral contraception (EC) among women attending the gynecology outpatient clinic of the Hospital Fundação Santa Casa de Misericórdia of the State of Pará, the second largest state in the Brazilian Amazon.

METHODS: A cross-sectional study was conducted with 316 sexually active women, aged 18 to 50 years, who attended the gynecology outpatient clinic. Participants were included based on spontaneous demand between June and July 2012. Patients answered a questionnaire with 29 questions, including: age in years, educational attainment, knowledge about EC, and previous use of the method. The primary outcome was knowledge on EC use.

RESULTS: Participants' mean age was 31.84 years (SD ± 8.00). As for their educational level, 46.84% of them had completed high school, and only 8.55% had higher education. Most of the women obtained information about EC through friends (48.61%, n = 152), and only 7.30% from their doctors. Although most participants (83.54%) reported to be aware of the method, only 0.63% reported that EC could be used up to 5 days after unprotected intercourse; 57.59% did not know how to use it; and 76.58% (n = 242) had never used the method.

CONCLUSION: The women in our study seem to have a high level of knowledge and prevalence of use of emergency contraception, although few of them knew about the time limit for its use. They should receive more information about emergency contraception.

Keywords: *Emergency contraception; contraception; health services; unintended pregnancy*

Contraception has been a concern since ancient times[1-3]. Such reports popularized precarious birth control methods as the resources available to the next civilizations[3]. In the 1950s, Gregory Pincus was able to mimic the effect of progesterone in blocking ovulation and thus inhibiting fertility[4,5]. Additionally, in 1972, Albert Yuzpe described the use of a postcoital hormonal contraception regimen[6], contributing decisively to the development of postcoital contraception or emergency contraception (EC).

Several emergency contraceptives have been developed over the years, leading to new routes of administration and new drugs, such as pills and intrauterine devices. New actions of EC levonorgestrel use have been proposed as pills as well as vaginal gels, with the vaginal gels having the possibility of joint action for preventing unwanted pregnancy and sexually transmitted diseases[5]. Recently, ulipristal acetate (UPA) derived from 19-norprogesterone was approved and developed to have greater specificity for progesterone receptors[7]. However, EC remains relatively unknown and underused in many countries[8,9].

Around 210 million women get pregnant every year worldwide. Seventy-five to 79 million of these pregnancies are unintended, with many cases ending up in abortion[10-12]. Therefore, this is a serious public health problem, with a negative impact on maternal morbidity and mortality[12]. More than 700,000 maternal deaths worldwide between 1995 and 2000 were related to unwanted pregnancies, and over 400,000 of these deaths resulted from unsafe abortions, which is an evident sign that access to contraceptives has long been inadequate[13]. Emergency contraception could prevent most of these pregnancies, avoiding immense human suffering and reducing the rate of criminal or high-risk practices, including those resulting from sexual violence[14]. Brazil's health ministry estimates that about 1 million unsafe abortions occur annually, many of them resulting from rape[15]. Part of these pregnancies are also carried to term, leading to a high possibility of child rejection, as well as to unpredictable family and social implications[14,15].

Reducing maternal and child mortality and morbidity is among the Millennium Development Goals of the United Nations. This goal depends directly on the supply of adequate reproductive health care and family planning in the fight against diseases such as AIDS, malaria, and others[16].

Brazil has regional differences that interfere with knowledge and access to information and contraceptive methods, including EC. The state of Pará (an indigenous name that means sea), larger than many countries in the world, is located in the North region of the Brazilian Amazon and has 1,247,689.515 km². Therefore, the objective of the present study was to assess the use of and the level of knowledge about EC, as well as the methods, prevalence of use, and proper use among sexually active women from the state of Pará.

METHODS

A cross-sectional study was conducted with sexually active women of reproductive age attending the gynecology outpatient clinic of the Hospital Fundação Santa Casa de Misericórdia of the State of Pará, a center of excellence for high risk maternal and child care. Participants were selected among patients who spontaneously sought specialized care at the women's outpatient clinic between June and July 2012.

Patients were invited to participate in the study, and those who agreed to participate and signed the Informed Consent Form (ICF) approved by the Research Ethics Committee (GPPG/HCPA 08299) were included. The study included 316 women aged 18 to 50 years. Patients with speech, hearing, or mental disorders were excluded, as well as those under 18 years old or legally incapable. After signing the ICF, patients answered a questionnaire addressing the following variables: age (years), educational attainment, age at menarche (years), contraceptive method and frequency of use, condom use, previous pregnancies, knowledge about EC, and previous use of EC.The researchers then answered the interviewees' questions and handed out information leaflets on EC.

The sample size was estimated considering a prevalence of knowledge of 50%, a margin of error of 6% and a confidence level of 95%. The minimum sample size was set at 267 patients. Data were compiled into a database using Microsoft Excel. Statistical analysis was performed using the SPSS 20. Numerical variables were expressed as mean and standard deviation, and Student's *t* test was used for comparison. Categorical variables were analyzed using the chi-square test. Absolute and relative frequencies were used to describe the other variables. Statistical significance was set at $p < 0.05$.

RESULTS

Table 1 shows the questionnaire variables applied to the patients. Age in years, educational attainment (years), age of menarche, age of sexual initiation, number of partners, number of pregnancies, number of unplanned pregnancies, and number of planned pregnancies are expressed as mean ± standard deviation. Contraceptives used, hormonal methods, non-hormonal methods, systematic use of contraceptive methods, systematic concomitant use of the condoms, and whether the patients considered themselves sufficiently informed on contraceptive use are expressed as proportions.

The mean age of the 316 women attending the gynecology outpatient clinic of the Hospital Fundação Santa Casa de Misericórdia of the State of Pará was 31.84 years (SD ± 8.00), with a minimum age of 18 years and a maximum age of 50 years. The mean number of years of study was 12.82 (SD ± 3.57), considering grade retention and resumption of studies. When this variable was related to educational attainment, 46.84% of the patients had completed high school and only 8.55% had entered university (3.80% graduated and 4.75% did not graduate). Mean age at menarche was 12.8 years (SD ± 1.49), whereas the mean age at the beginning of sexual life was 17.60 years (SD ± 3.63). Mean number of sexual partners was 3.88 (SD ± 3.27). The different contraceptive methods used by the patients were distributed as follows: 36.40% of patients - combined oral contraceptives (COCs); 19.60% - condoms; 2.20% - intrauterine device; 28.80% - other methods (injective - 27.80% and others 1.00%); and 12.30% - no contraceptive methods. In 59.80% of the cases, the contraceptive method was prescribed by the patients' doctors, which accounts for 189 patients who reported receiving medical counseling. Regarding the systematic use of contraception, 274 women reported the use of a contraceptive method. Out of these, 78.70% reported regular use, 14.80% reported irregular use, and 6.50% reported sporadic use. However, 39 women reported they did not use any contraceptive methods. When asked about the concomitant use of condoms, 63.79% of the patients denied the concomitant use of condoms, and 36.21% reported condom use combined with a regular contraceptive method.

No statistical difference was found between years of study and use of contraceptives. Mean number of years of study was 12.87 (SD ± 3.68) among users of COC; and 13.09 years (SD ± 3.19) among users of other methods(p = 0.637) (Figure 1).

Table 1: Population profile.

Variables (n = 316)	Mean (± SD)	%
Age in years	31.84 (± 8,0)	
Age of menarche	12.80 (± 1,49)	
Age of sexual initiation	17.60 (± 3,63)	
Years of school	12.82 (± 3,57)	
Educational attainment		
Incomplete Elementary School		27,22
Complete Elementary School		1,90
Incomplete Secondary School		15,51
Complete Secondary School		46,84
Undergraduate		4,75
Graduate		3.80
Number of partners	3,88 (± 3,27)	
Number of pregnancies	1,92 (± 1,54)	
Number of planned pregnancies	0,20 (± 0,69)	
Number of unplanned pregnancies	1,72 (± 1,61)	
Contraceptive used (n = 316)		
None		12,30
Oral contraceptive		36,70
Condom		19,60
IUD		2,20
Injectable		27,80
Coitus interruptus		1,00
Systematic use of the contraceptive method (n = 274)		
Regular - always		78,70
Irregular - most of the times - 80%		7.40
Irregular - with frequency - 60%		7,40
Irregular - sporadic - 30% or less		6,50
Systematic and concomitant use of condoms (n = 58)		
Regular		36,21
Irregular		63,79
Womens' answeres when asked if they were sufficiently informed about the use of contraception (n = 315)		
Yes		52,85
No		31,65
Yes, not enough		15,50

Prevalence of EC use was 23.42% among all participants. Of these, 264 (83.54%) claimed to be informed about EC; 48.61% (152 patients) of the total sample were informed about the method by friends, and only 7.30% received information from physicians. The percentage of interviewees who declared to know how to use EC was 43.99% (n = 139). However, only 5.06% of these actually reported using the method correctly (Figure 2).

When the participants were asked about the period of time between unprotected intercourse and the use of EC in order to effectively prevent pregnancy, 23.10% (n = 73) believed it was 24 hours, 16.14% declared it was 72 hours, 2.53%

reported it was 6 hours, and only 0.63% answered that EC could be used within 5 days after unprotected sexual intercourse. Almost 57.59% of patients could not answer the question (Figure 3).

When asked about EC use, 76.58% (n = 242) of the participants reported they had never used it, and 49.10% said they would not have used the method even if they had more information about it (n = 155).

In terms of educational attainment, there was no statistical difference between the patients who described the correct use of EC and those who described the wrong use (figure 4).

The mean number of pregnancies among the patients was 1.92 (SD ± 1.54), with a mean number of planned pregnancies of 0.20 (SD ± 0.69) and a mean number of unwanted pregnancies of 1.72 (SD ± 1.61).

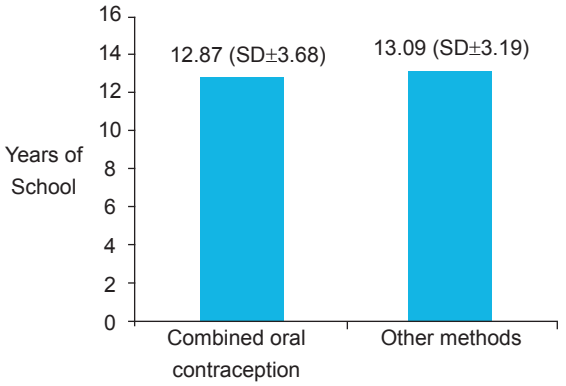


Figure 1: Years of school and regular use of oral contraceptives.

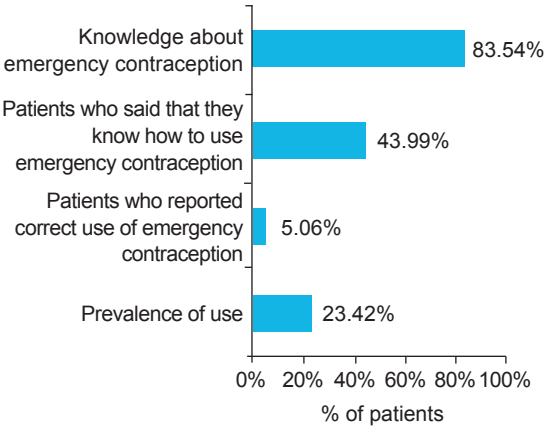


Figure 2: Level of knowledge about emergency contraception.

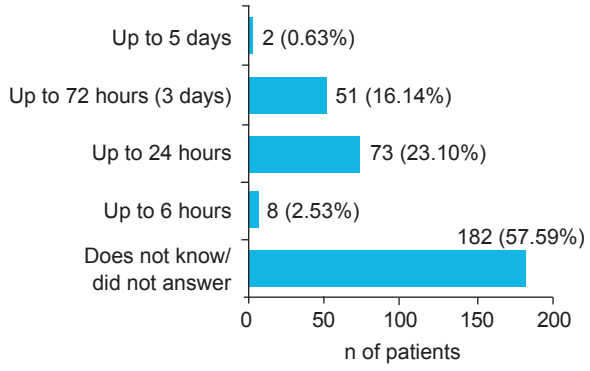
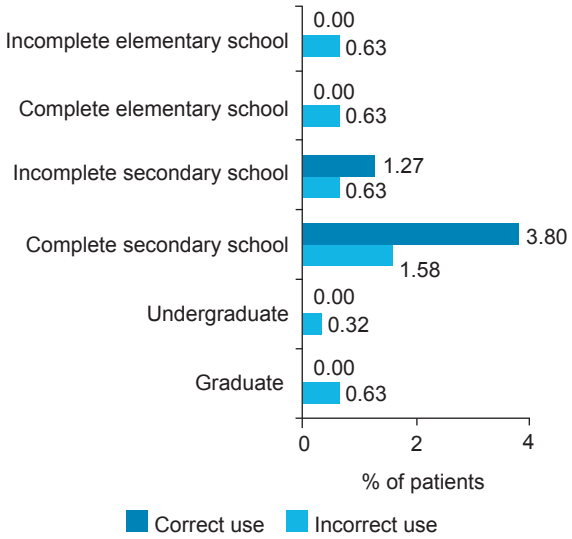


Figure 3: Maximum time for use of emergency contraception.

DISCUSSION

Defining the profile of knowledge on EC was not easy. Until now, many studies were based on questionnaires that, despite sharing similar data, were self-administered, which may lead to problems of text interpretation by the participants, who are not always able to answer the questions properly and have difficulty remembering past events[17-22].

An interesting issue is the need to define the profile of knowledge among health provideres[6,12,18,19]. If these professionals are not prepared to provide relevant information about the EC method, combined with the fact that the method can be purchased by partner and pass this information to the user of the method, this may trigger a cascade of wrong information. This phenomenon may be figuratively called “syndrome of lack of knowledge about EC”, since several factors interfere in the process.



Chi-square test, p = 0.063.

Figure 4: Educational level vs. knowledge about correct use of emergency contraception.

This study included only women who were receiving medical care by the Brazilian Unified Health System (SUS), a public health service offered by the government, and who were attending the gynecology outpatient clinic of the Fundação Santa Casa de Misericórdia of the state of Pará. Although age and educational attainment were supposed to play a positive role in the knowledge about EC and its use, data suggest that such an association is not warranted, since knowledge on this method is below the expected rates even in developed countries[6,8,23,24].

Other authors reported different mean ages in studies conducted with women, while some included adolescents os students of both sexes: 16.65 years[25]; 17.2 years[26]; 19 ± 2 years[27]; 21 ± 3.42 years[28]; 20.5 ± 1.75 years[29]; 21.2 ± 4.94 years[9]; 21 to 30 years[11]; 22.5 years[30]; 22.7 ± 4.9 years[17]. This is probably because these studies were conducted with adolescents and/or students[9,11,17,25-30].

In our study, mean age was 31.84 ± 8.00 years, which corroborates with studies that assessed the knowledge of health professionals in Kumasi (Ghana)[18] and Rawalpindi, Pakistan[19] (33 years old). It is interesting to point out that part of the study was conducted during the vacation periods, which may have contributed to the smaller number of students and adolescents among our patients. Our findings showed that 46.84% of patients had completed high school, whereas only 8.55% went to university (3.80% graduated and 4.75% still studying). In addition, 48.61% of patients were informed about EC by friends, and only 7.30% learned about it from their medicine doctor. These factors increase the risk of receiving wrong information and can have a negative cascade effect, perpetuating misconceptions about EC use.

In the state of Pará, where there is one of the largest watersheds in the world, people rely on water transport to travel from numerous towns to the capital. Belém, the capital city, is surrounded by several islands with small villages, and the varying water levels in the rivers make water transport difficult, as sometimes boats take 6 to 12 hours to be able to navigate. This way, young women commonly move from small towns to the capital city in order to live with relatives and acquaintances and seek better study and work opportunities, as well as better living conditions. However, these plans do not always work out. Because of lack of support from their families, many of these young women end up working under bad conditions, and their hopes of studying and achieving better financial status are undermined by unexpected situations, such as unplanned pregnancies, unstable marital relationships, poverty, illegal abortion, and prostitution. Instead of attending university, these women have to work to be the family breadwinner, with these families usually consisting of the mother and her children. Within this context, young children, some of them aged 8 to 12 years, end up taking care of younger siblings so that their mothers are able to work.

The participants in this study had a surprisingly large number of years of study, which could falsely suggest a high educational attainment among these women. In fact, many of them attended school for many years, but these years include grade retention, dropouts, and re-enrollments. There were even participants with up to 18 years of study who had never completed high school. In the work of Belzer at al., 84.00% of adolescent mothers had 8 or fewer years of schooling (n = 160)[26]. Among the EC buyers, those who complete elementary school are most likely to buy it, followed by those with incomplete high school[3]. This suggests there is no association between knowledge about EC and educational level.

A study conducted in New York in 2007 revealed that less than half of the students had heard of the method, but even when there was greater knowledge, EC use remained fairly low[8]. Similar results were found in the United Kingdom and in Northern Ireland, where 91.00% of women had heard of the morning-after pill, but only 7.00% had used it in the past year[8]. In Switzerland, 42.00% of women thought that EC had to be used within 24 hours of unprotected sexual intercourse, 13.00% believed that EC is 100.00% efficient, and 38.00% were not sure about EC effectiveness when taken on the first day or third day after unprotected intercourse[23].

Although education makes people more concerned with their health, serving as a positive factor, this positive influence is not always clear in the studies. It is often possible to observe low levels of knowledge and low frequencies of use of EC, probably exacerbated by the illusion that other people are always at a higher risk than us. In Brazil, 96.00% (n = 588) of students from different regions reported they “had heard” of EC, 96.80% (n = 390) of girls and 95.70% (n = 198) of boys. However, less than half the sample (40.7%; n = 238) knew that EC should be used within 72 hours of unprotected sexual intercourse, and about 48.00% (n = 280) believed that women had 24 to

48 hours to use it[24]. It is worth mentioning that none of these students said that EC could be used up to 120 hours after unprotected intercourse, which means many women did not use the method due to lack of understanding about the period of time available for effective EC use. This restricts access to the method and, therefore, reduces protection, not to mention the fact that the effectiveness of the method is also related to the period of the ovulatory cycle when EC is used.

In spite of the efforts towards making users familiar with the method, there is still much to be done, as confimed by the different results found in different populations, regardless of socioeconomic status and cultural environment. Differences are more easily detected in underdeveloped countries. Cultural and religious aspects greatly contribute to the high rates of unwanted pregnancies and the resulting illegal abortions[10,19].

In our study, although 83.54% of the patients reported knowing the method and 43.99% reported knowing how to use it, only 5.06% described the method correctly. Regarding use of EC, 76.58% said that they had never used EC, and 49.10% said they would not have used the method even if they knew more about it. These findings clearly show the lack of information about EC and interest in the method. Women also do not seem to be interested in or aware of the benefits provided by EC in reducing many risks posed by unprotected sexual intercourse, particularly increased poverty and less opportunities for individual and collective development.

The level of knowledge about emergency contraception among the patients was surprisingly high in our population, and the prevalence of use of it too. However, the lack of possibility of using the method up until the fifth day after unprotected sexual intercourse shows that there is still much to be done. Knowledge about EC needs to be rethought as an indicator of quality of life and human development, since knowledge gaps can be directly related to the occurrence of unwanted pregnancy and abortion practices, which are associated with serious psychosocial issues. Therefore, it is extremely important that information about safe and responsible practices be more easily disseminated as a mechanism that helps to prevent the increase of poverty and underdevelopment. Information should be provided in an easy and clear way, with a focus on social groups lacking in better means of education. Although there are no totally safe contraceptive methods and although they are not always used correctly, their correct use would certainly reduce the high rates of unintended pregnancy, unsafe abortions and maternal mortality.

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