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LNG-emergency contraceptive pills: What do Argentinean healthcare students know?

Belén Provenzano-Castro [a,b,*], Silvia Oizerovich [a], Babill Stray-Pedersen [b,c]

[a] Department of OB-GYN, Gynaecology Division, Faculty of Medicine, University of Buenos Aires, Ciudad de Buenos Aires, Argentina
[b] Institute of Clinical Medicine, Faculty of Medicine, University of Oslo, Norway
[c] Division of Women, Rikshospitalet, Oslo University Clinic, Norway

Introduction

Emergency contraception (EC) refers to safe and effective post-coital methods that can be used to prevent pregnancy during the first few days after unprotected intercourse, contraceptive failure or misuse (such as forgotten pills or torn condoms), rape or coerced sex [1].

Although there are many modern contraceptive methods, there is a significant 'unmet need' for adequate contraception. Furthermore, accidental pregnancies resulting from contraceptive failure are known to occur. Studies estimate that, worldwide, 5.9 million pregnancies occur annually despite "perfect use" of contraceptive methods and that 26.5 million pregnancies occur during "typical use" [2,3]. As a result, women are exposed to many unplanned and unwanted pregnancies and their consequences.

EC offers women an important second chance to prevent pregnancy resulting from unplanned sexual activity or failure of regular contraception. In turn, this can help to reduce maternal mortality and morbidity caused by unsafe abortions [2]. Also, in countries where abortion is not legal, adequate access to EC could reduce mortality and morbidity related to illegal abortion procedures [4].

In 2008, an estimated 21% of all pregnancies worldwide ended with induced abortions (43.8 million induced abortions). The estimated global abortion rate was 28 abortions per 1000 women aged 15–44 years, and half of those abortions were unsafe. Those unsafe abortions caused 13% of pregnancy-related deaths [5,6]. In South America, three million induced abortions, representing one-fourth of all pregnancies on the continent, were performed yearly between 1995 and 2008. Nearly all of these abortions were performed under unsafe conditions [5]. In Argentina, an estimated 370,000–460,000 abortions are performed annually, most under unsafe conditions [12]. These procedures have resulted in one-third of all maternal deaths during the past decade [8]. Moreover, in 2013, half of maternal deaths (25) due to abortion occurred among women aged 15–29 years. Nine percent of the deceased were adolescents [7,8].

There are different methods that are used for emergency contraception. In Argentina, the only available method is the *Levonorgestrel Emergency Contraceptive Pill* (LNG-ECP). For this reason, our investigation focused on this method.

This progestogen-only method is taken as a single dose (1.5 mg) within five days (120 h) of unprotected intercourse. Alternatively, it can be taken in two doses (0.75 mg each; 12 h apart). It is 52–94% effective in preventing pregnancy. However, it is more effective during the early hours following intercourse. The method is reported to be most effective when taken within 12 h of having sex. It is 79–84% effective when used within the first 72 h. It may still prevent pregnancy for up to 120 h (5 days) after unprotected sexual intercourse, but it is not as effective. Therefore, urgent access to this method is important [1,9].

LNG-ECP interferes with the release of an oocyte (egg) from the ovary when it is taken before ovulation. Additionally, it may prevent sperm and the egg from meeting by affecting cervical mucus, sperm motility and/or the ability of sperm to bind to the egg [10]. LNG-ECP is not effective after a fertilized oocyte begins implantation and cannot interrupt an established pregnancy. It does not cause abortion, and it causes no harm to a developing embryo [1].

According to World Health Organization lists, there are no medical conditions for which the risks of emergency contraceptive pills outweigh their potential benefits [11]. The only condition in which they are not recommended is when the woman has a confirmed pregnancy. Nevertheless, even when LNG-ECP fails to have its intended effect (or if a woman is already pregnant when she takes the pills), it causes no adverse effects to either the woman or to an ongoing pregnancy [1].

Repeated use of LNG-ECP is safe, so women can use the method as often as needed. However, ECP are for emergency use only and are not appropriate for regular use because of the lower efficacy rates compared with appropriate use of routine contraceptives. Furthermore, frequent use of ECP may result in side-effects, such as menstrual irregularities, even though their repeated use poses no known health risks [1].

As with other hormonal contraceptive methods, the ECP method offers no protection against sexually transmitted infections, including HIV.

In Argentina, LNG-ECP is available by prescription. However, it can generally be purchased at the pharmacy without a prescrip-

* Corresponding author at: 2454 Beruti St., Ciudad de Buenos Aires CP (C1117AAD), Argentina.
E-mail address: belenprov@hotmail.com (B. Provenzano-Castro).

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tion. As of 2007, it is provided at no cost by public hospitals and primary care centres. Nonetheless, women's access to this method remains extremely inconsistent.

It has been suggested that reproductive health programs should focus on disseminating accurate information and improving access to the ECP method, both among the general population and in vulnerable groups, i.e., women with low socioeconomic status, low education levels, and living in rural areas [13].

Medical doctors, midwives, and nurses play key roles in providing the public with adequate information, education, and access to sexual and reproductive healthcare.

However, recent investigations in Argentina revealed a lack of EC knowledge among health professionals, as well as many prejudices against the method. Although 78% of paediatricians know about LNG-ECP, only 58% would prescribe the method [18]. Furthermore, because healthcare professionals face difficulties obtaining correct information about EC, they also have difficulty transmitting accurate information to others. There are common barriers to contraceptive methods in general, and other barriers specific to EC [14–18].

Accurate information on the use, effectiveness, safety and relevance of ECP is crucial for future healthcare providers and for the population at large.

The School of Medicine of the University of Buenos Aires (UBA) is one of the largest in Argentina, with 5000 students registered and 2300 graduates annually.

The objective of this study is to compare knowledge on LNG-ECP between first- and final-year healthcare students of the School of Medicine, UBA. From this, we will infer what they, as a group, have learned from school about emergency contraception.

Methods

Study design

A cross-sectional study was conducted from 2011 to 2013. Students from the UBA School of Medicine (majoring in medicine, midwifery, nursing, radiology, nutrition, speech therapy, and physiotherapy) completed an anonymous questionnaire on sexual and reproductive health.

Ethical approval was obtained from the Ethical Committee of the Facultad de Medicina, Universidad de Buenos Aires and The Regional Committee of Health Research Ethics (REK), Norway (2014/1244).

Sampling

A first- and a final-year class majoring in each of the fields of study surveyed (medicine, midwifery, nursing, radiology, nutrition, speech therapy, and physiotherapy) were selected to answer the questionnaire using multistage random probability sampling. Non-probability sampling was employed to select participants. Only those students present on the day of the survey answered the questionnaire.

Data collection methods

We designed a self-administered multiple-choice questionnaire after reviewing similar surveys from Argentina and other countries [19–21]. This investigation was part of a larger study. The questions included background information and knowledge questions regarding sexual health, contraception, sexually transmitted infections, abortion, and legislation. We added questions about personal experiences and opinions, especially for the questionnaire administered to first-year students. Before the main study was administered, the questionnaire was pilot-tested among a small group of students and underwent minor revisions.

We coordinated with faculty members and lecturers to schedule the administration of the questionnaire.

Students were given an explanation of the study's purpose and intent. They then provided informed consent. Participation was voluntary, and the information collected was confidential and anonymous. No incentives were offered for participation. The researchers remained present while students completed the questionnaire in case of doubts or questions. The questionnaire took approximately 30 min to complete.

First, we asked students to identify their awareness of a list of contraceptive methods. We then presented different statements to the students for agree/disagree responses.

Data analysis

The sample was weighted for gender and major using UBA School of Medicine statistics.

Frequencies and cross-tabulations were calculated. Univariate and bivariate analyses were performed. Chi-square, Fisher, and other tests were conducted as appropriate to compare first- and final-year students' responses. IBM SPSS v. 20 and Epidat 3.1 were used for analyses. The significance threshold was 0.05.

Students who majored in radiology, nutrition, speech therapy, and physiotherapy were grouped as 'other studies' or 'controls' because they did not have sexual and reproductive health education in their curricula. Their answers were compared with those given by medical, midwifery, and nursing students.

Results

The questionnaire was completed by 1489 healthcare students (781 first-year students and 708 final-year students). Students who did not provide their nationality, field of study, or birth year were excluded, leaving a total of 760 and 695 respondents from first- and final-year students, respectively. The mean age of the first-year students was 22.7 ± 4.9 years and that of final-year students was 27.19 ± 4.4 years (Table 1).

Use of LNG-ECP

The 760 first-year students were asked about their use of emergency contraception (LNG-ECP). Among the 82.4% with a history of sexual intercourse, fewer than 3% used LNG-ECP during their sexual debut; 4.4% of the respondents reported using LNG-ECP as their regular contraceptive method.

The 53.4% of female and the 27.6% of male respondents reported that they or their sex partner had used LNG-ECP at least once ($p < 0.001$).

Among students who used LNG-ECP in the past 12 months, 49.1% reported taking it only once, 15.6% 2–5 times and 2.2% more than 5 times.

The main reasons for using EC were: contraceptive method failure (56.7%), no contraceptive use (32.2%) and doubts regarding contraceptive effectiveness (17.9%).

Of the students who used LNG-ECP, 86.1% acquired the drug at a pharmacy without prescription. Only 10.1% received it free of charge from either public hospitals or primary care centres.

First year students' knowledge of LNG-ECP

Of first-year students, 78.3% were aware of LNG-ECP, with no significant differences related to gender, field of study or experience with sexual intercourse. Awareness of EC was significantly