

# Knowledge and Patterns of Use of Emergency Oral Contraception among Portuguese Female Users of Healthcare Services



## Nível de Conhecimento e Padrão de Utilização da Contraceção de Emergência entre as Mulheres Portuguesas Utilizadoras dos Cuidados de Saúde

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### ABSTRACT

**Introduction:** The lack of knowledge about the existence, effectiveness, and supply of emergency contraception as well as access to it, its effective duration and the lack of recognition of the need for its use can prevent women from using it. The aim of this study was to ascertain the attitudes, experience, level of knowledge and information sources about emergency contraception of Portuguese female users of healthcare services.

**Material and Methods:** We conducted a multicentre, cross-sectional, observational study among 280 Portuguese women users of health care services through an original and anonymous questionnaire composed of 30 questions.

**Results:** The mean age of the women who replied to the questionnaire was  $33.83 \pm 8.76$  years. Of the observed sample, 27.7% used EC, 50% of whom with no counselling. Despite 92.1% of women claiming knowledge about emergency contraception, only 31.2% of these answered 8 - 10 questions correctly (14 in total). The media were the most frequent source of information (63.4%). Most participants (67.5%) considered that emergency contraception is associated with severe adverse reactions. Furthermore, 76% did not know the time range of effectiveness after unprotected sexual intercourse. Youngest age ( $p = 0.038$ ), higher education level ( $p < 0.001$ ), increasing parity ( $p = 0.051$ ) and previous use of emergency contraception ( $p = 0.011$ ) were identified as the determinant sociodemographic factors for a higher level of knowledge about emergency contraception.

**Conclusion:** This study showed that female users of healthcare services were aware of the existence of emergency contraception, but they demonstrated a low level of knowledge about it, especially regarding the correct period of use, place of acquisition and safety issues.

**Keywords:** Attitude; Emergency Contraception; Health Education; Health Knowledge, Attitudes, Practice; Portugal; Sexual Health

### RESUMO

**Introdução:** A falta de conhecimento sobre a existência, eficácia e fornecimento da contraceção de emergência, bem como a sua acessibilidade, prazo efetivo e a falta de reconhecimento da possibilidade da sua utilização podem impedir as mulheres de a utilizarem. O objetivo do estudo foi conhecer a experiência, atitudes, as fontes de informação e nível de conhecimento sobre a contraceção de emergência entre mulheres portuguesas utilizadoras dos cuidados de saúde.

**MATERIAL E MÉTODOS:** Foi desenvolvido um estudo observacional, transversal e multicêntrico em 280 mulheres portuguesas utilizadoras dos cuidados de saúde, através da aplicação de um questionário original e anónimo constituído por 30 questões.

**Resultados:** A idade média das mulheres que responderam ao questionário situou-se nos  $33,83 \pm 8,76$  anos. Da amostra em estudo, 27,7% referiram utilização prévia de contraceção de emergência, das quais 50% sem aconselhamento. Apesar de 92,1% afirmar conhecer esta opção, apenas 35,9% respondeu corretamente a entre oito a 10 questões de avaliação de conhecimento (total de 14). Os *media* constituiram a fonte de informação mais frequente (63,4%). A maioria das participantes (67,5%) considera que a contraceção de emergência está associada a efeitos adversos graves e 76% desconhece o intervalo de tempo de eficácia da contraceção de emergência após relações sexuais desprotegidas. A idade jovem ( $p = 0,038$ ), maior nível de escolaridade ( $p < 0,001$ ), o aumento da paridade ( $p = 0,051$ ) e a utilização prévia de contraceção de emergência ( $p = 0,031$ ) foram os fatores sociodemográficos associados a maior nível de conhecimento sobre a mesma.

**Conclusão:** O estudo demonstrou que apesar das utilizadoras dos cuidados de saúde de afirmarem ter conhecimento da existência da contraceção de emergência, revelaram baixo nível de conhecimento sobre este tipo de contraceção, particularmente em relação ao período correto de utilização, local de aquisição e questões de segurança.

**Palavras-chave:** Attitude; Conhecimentos, Atitudes e Prática em Saúde; Contraceção de Emergência; Educação em Saúde; Portugal; Saúde Sexual

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## INTRODUCTION

In 2015, a study about contraception practices in Portugal including 4003 women showed that 94% of sexually active women regularly used contraception and 17% had used emergency contraception (EC) at least once.<sup>1</sup> Despite these figures, there is a high number of unwanted pregnancies. In 2017, 14 899 abortions at the woman's request were recorded; among Portugal's geographical areas, the central region was the region with the third highest incidence.<sup>2</sup> Since 2012, there has been a decreasing tendency<sup>2</sup> in unwanted pregnancies, but it is still a significant public health problem with high social impact.<sup>3</sup> These numbers may represent a gap in knowledge about contraception, in dissemination of information and access to or efficiency of family planning.

EC refers to any contraceptive method used after unprotected sexual intercourse to prevent an unwanted pregnancy.<sup>3-5</sup> Nowadays, three options are available in Portugal, in decreasing order in efficacy: the intrauterine copper device, ulipristal acetate and levonorgestrel.<sup>5</sup> In this country, EC is regulated through decree-law 12/2001<sup>6</sup> grants free access to EC in primary healthcare centres, family planning services, hospital gynaecology/obstetrics departments and youth care centres, with the Health National Service coordinating protocols and also in community pharmacies with no need for a medical prescription.

The effective use of regular contraception is the best prevention strategy for unwanted pregnancies. However, in case of unprotected intercourse, EC makes an effective contribution to increased family planning options and to decreasing unwanted pregnancies by 75% - 89%,<sup>1</sup> without also decreasing regular contraception use, according to scientific evidence.<sup>3</sup>

According to several studies, the lack of knowledge about the existence, efficacy and supply of EC as well as access to it, its effective deadline and the lack of recognition of the need for its use can prevent women from using it.<sup>3,7,8</sup> Increasing EC use in the case of unprotected intercourse will mainly depend on increasing awareness of it among both of the general public and healthcare professionals. Few studies<sup>9,10</sup> in Portugal have been carried out in recent decades which assess the level of knowledge about EC and also its method of use, particularly women of reproductive age.

We decided to undertake a study in the central region of Portugal to ascertain the attitudes, experience, level of knowledge and information sources about EC among female users of healthcare services. Our intention is to refine future strategies to improve access to and counselling on reproductive and sexual health, considering the specific needs of our population.

## MATERIAL AND METHODS

This is a multicentre, cross-sectional, analytical, observational study, including sexually active Portuguese women between the ages of 18 - 49 years and who are users of family planning services in both primary or secondary

health care in Portugal's central region. They all provided their informed consent to participate in the study. Women with cognitive deficit that could compromise understanding of the questionnaire were excluded.

Data was collected through a questionnaire composed of 30 questions; it was anonymous, self-administered and participants had the right not to answer. This questionnaire was adapted from others that had been previously published.<sup>11,16</sup> It was divided into five sections: sociodemographic characteristics (age, marital status, level of education, professional status, residential area, parity); contraceptive habits; EC education and sources of knowledge acquisition; profile of EC use or intended use if necessary; women's perspective on the need for improved EC information dissemination and means of doing so. The assessment of knowledge about EC was made using the questions shown in Table 1. Answers were categorized in "No", "Yes" and "Maybe". The final score was quantified by the frequency of correct answers from a total of fourteen questions.

All the data collected were registered on a database built with Excel® software, making sure participants remained anonymous. The study was conducted according to the principles of the Helsinki Declaration and was approved by the hospital ethics committee.

Statistical analysis was conducted through Statistical Package for the Social Sciences (SPSS®) software v.21.0. In descriptive analysis, categorical variables were presented as percentages and quantitative variables as mean and standard deviation. We used multiple linear regression to identify the sociodemographic characteristics that made an important contribution to the level of EC knowledge. A significance level of  $p < 0.05$  and a confidence interval of 95% were considered.

## RESULTS

Two hundred and eighty women with an average age of  $33.83 \pm 8.76$  years were included. Of these, 19% were between 18 and 24 years old, 33.6% between 25 and 34 and 47.7% between 35 and 39 (Table 2). Most of them were married (57.4%), professionally active (73.7%) and had one or two children (54.6%) and 7.9% were students. Amongst the surveyed women, 42.5% of surveyed women had completed secondary level education and 37.5% had a university degree. As far as the place of residence is concerned, 54% of the women identified they lived in an urban area. Regular use of a contraceptive method was observed in 72.8% of women, of which combined oral contraception (COC) (61.3%) and intra-uterine devices (13.2%) were the most prevalent (Fig. 1).

Previous EC use was stated by 27.7% of women, of whom 50% with no previous counselling, 22.4% after counselling from their friends and 18.4% based on advice from healthcare professionals. EC had only been used once by 84.6% of the respondents, while 15.4% used it at least twice. The community pharmacy was the purchase location for 97%. Only 17.1% changed or started a regular

**Table 1 – Response rate of the knowledge assessment questionnaire about the EC**

Questions	Yes (%)	No (%)	Maybe (%)
Is EC the most adequate contraceptive method for occasional sexual intercourse?	11.2	70.4	18.4
Is EC the most adequate contraceptive method when there no fixed sexual partner?	8.8	80.0	11.2
Is EC an alternative contraception method that should be used only when all the others fail?	64.3	21.4	14.3
Is EC an abortive method?	23.1	57.9	19.0
Can EC be used as a routine contraceptive method?	0.8	94.4	4.8
In your understanding, does the EC's level of effectiveness depend on how early it is taken, meaning that it is more effective the sooner it is taken?	62.9	11.3	25.8
Is EC associated with serious adverse effects?	29.4	32.5	38.1
Does EC protect against sexually transmitted diseases?	0.0	94.4	5.6
Is EC harmful for future fertility?	23.0	35.7	41.3
Is EC available without medical prescription in pharmacies?	79.4	7.1	13.5
IS EC provided free of charge in health centres and hospitals?	27.0	25.4	47.6
Can a woman who cannot take birth control pill use EC?	18.4	41.6	40.0
After EC use, is it necessary to wait for the next period to start a method of contraception?	19.2	29.6	51.2
Until when should EC be used after unprotected sexual intercourse?	0 days: 19.4% 1 day: 30.8% 2 days: 24.4% 3 days: 18.6% 5 days: 5.4% 7 days: 1.4%		

contraceptive method after using EC.

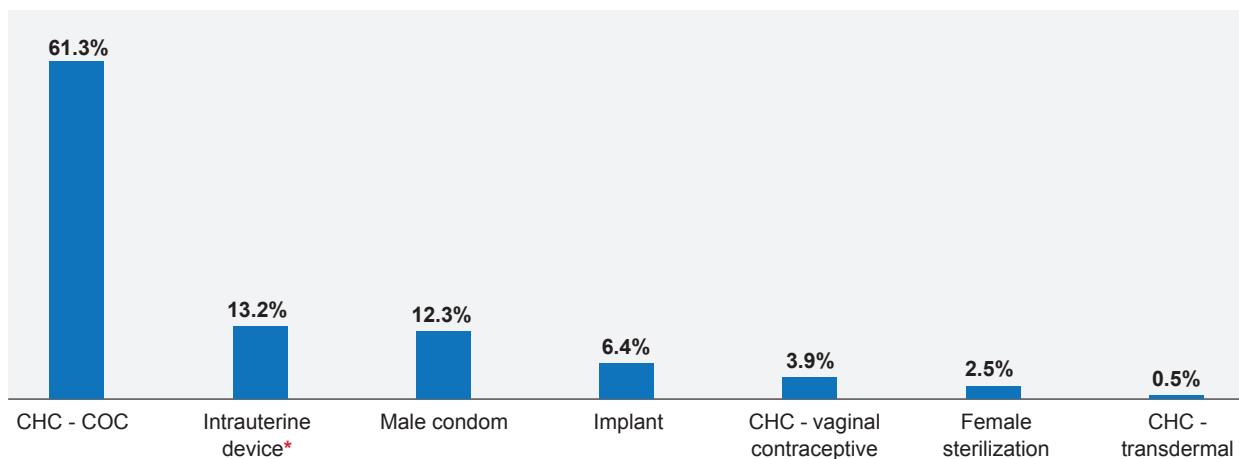
Most women (92.1%) admitted knowing about EC, mostly from the media (63.4%), friends and family (43.1) and healthcare professionals (41.2%) (Fig. 2). Among these women who claimed to have prior knowledge, only 31.2% answered to 8 - 10 questions correctly and only 4.7% at least 11 questions (Fig. 3). Table 3 shows the response rates for every question. Most respondents (67.5%) considered that EC is or may be associated with serious adverse effects and compromises or may possibly compromise women's future fertility (64.3%). Only 27% knew that EC is provided free of charge in healthcare centres and hospitals. Furthermore, 76% did not know what the time range of EC effectiveness after unprotected sexual intercourse was (UPSI), and 50.2% considered that EC was only effective on the same day or the next day after UPSI. EC was considered an abortion method by 23%.

In the multiple linear regression analysis, the youngest age ( $p = 0.038$ ), increasing parity ( $p = 0.051$ ), higher educational level ( $p < 0.001$ ) and prior EC use ( $p = 0.011$ ) were identified as the determinant sociodemographic factors of a higher level of knowledge about EC (Table 3).

Among the previous users of EC, 73.7% stated that they would use it again in case of UPSI. In 15.8%, doubts remained, while 10.5% rejected using it again. In this group, only 17.1% started or changed their regular contraceptive method after EC use. In the group of previous non-users, 39.9% said they would use EC in case of UPSI, 36.4% remained in doubt and 23.7% rejected its use. In these two groups, the main reasons for not using EC were: fear of side effects in 51.9%, unfamiliarity in 11.9% and being against

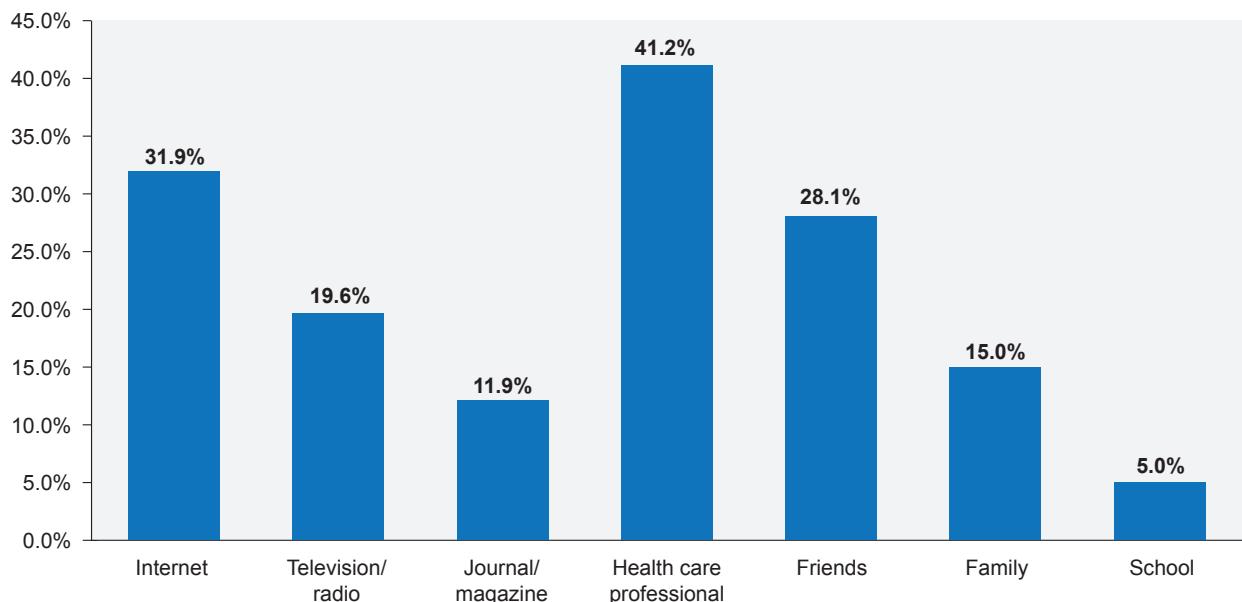
**Table 2 – Participants' sociodemographic characteristics**

Characteristic	%
<b>Age (years)</b>	
18 - 24	19.0%
25 - 29	16.8%
30 - 34	16.8%
35 - 39	17.6%
40 - 49	30.1%
<b>Marital status</b>	
Single/ divorced	42.6%
Married/ cohabiting couples	57.4%
<b>Level of education</b>	
Primary and basic school (9 years)	20.0%
Secondary school (10 - 12 years)	42.5%
University (> 12 years)	37.5%
<b>Professional situation</b>	
Employed	73.7%
Unemployed	18.3%
Student	7.9%
<b>Residential area</b>	
Rural area	46.0%
Urban area	54.0%
<b>Parity</b>	
Nulliparous	37.7%
1 - 2	56.4%
> 2	5.9%

**Figure 1** – Characterization of regular contraceptive practice

CHC: combined hormonal contraceptives; COC: combined oral contraceptive

\* Intrauterine device includes copper-containing intrauterine device (Cu-IUD) and levonorgestrel-releasing IUDs (LNG-IUDs)

**Figure 2** – Sources of information about EC

abortion in 7.1%. When asked about available EC information, 60.6% considered it to be insufficient and 83.9% needed more information, mainly through healthcare professionals (78.6%), internet (31.7%), school/university (26.6%) and television/radio (23.2%).

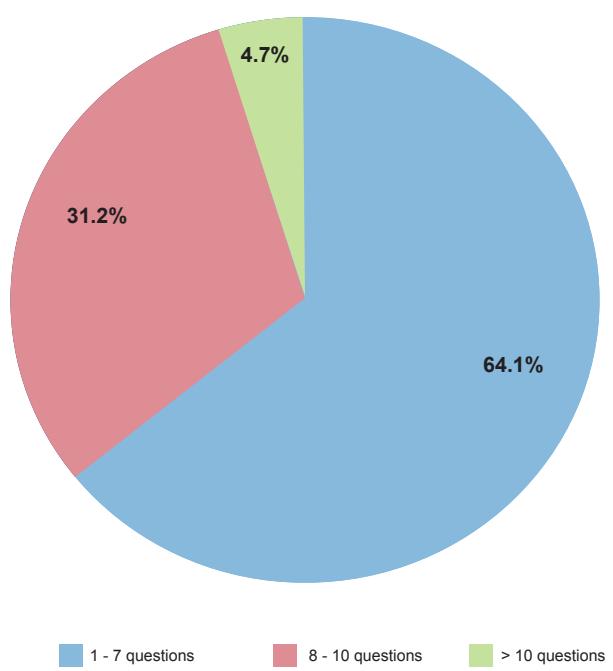
## DISCUSSION

This study exposed a rate of previous EC use of 27.7%, higher than the 17% described in the study on the assessment of contraceptive practices in Portugal in 2015.<sup>1</sup> However, when comparing with a study carried out in five European countries (France, Germany, Italy, Spain and the United Kingdom) with 7170 women aged between 16 - 46 years, the incidence of previous EC use was similar (24%).<sup>11</sup>

The use of EC with no advice from anyone occurred in half of previous users. Use after counselling by healthcare professionals was lower than reported in the literature.

Other studies show that, on the first use of EC, the rate of counselling from friends or community pharmacist was 53%<sup>2</sup> and 39% by healthcare professionals.<sup>10</sup> Community pharmacies were the most frequent place of purchase (97%), showing that it is easy to access EC. This is related to the fact that Portugal is one of the 56 countries in the world where EC is an over-the counter therapy.<sup>4</sup> This and the fact that it can be purchased in community pharmacies creates the possibility of anonymity and self-empowerment in its administration. This fact can also justify the low rate of women in this study who started or changed their regular contraceptive method after using EC (17.1%). Direct EC supply through community pharmacies does not allow for counselling on continuous and effective contraception, because pharmacists do not often provide that kind of advice.<sup>3</sup>

Regarding the level of knowledge about EC, 92.1% said they knew about it, like the 88% revealed in a previous



**Figure 3** – Proportion of correct answers to the knowledge assessment questionnaire about EC (14 questions)

Portuguese study.<sup>2</sup> Similarly, Leon Han *et al.*,<sup>12</sup> in a retrospective study involving 99 223 women aged 15 to 29 years, showed that 83% of women knew about EC in 2014.

The main source of information was the media (63.4%), followed by friends and family (43.1%) and then healthcare professionals (41.2%). Other studies have shown similar results. Rahman *et al.*,<sup>13</sup> in a retrospective study composed of 1474 women of reproductive age, found that the main information sources were the media (77.1%), family and friends (33.8%) and healthcare professionals (30.4%). Bastineli *et al.*<sup>14</sup> performed a retrospective study composed of 1773 women aged between 15 and 54 years old, who acquired information about EC through friends (41.6%) and the media (18.1%). In Portugal, there is no similar study involving adult female users of health care services. There is one, however, involving Portuguese teenage students, which reports the media as being the main source of information.<sup>9</sup>

The original questionnaire used to evaluate the actual

knowledge of participants, despite not being validated, proved very useful in obtaining the intended goals. Although most women claim to know about emergency contraception, a minority revealed effective knowledge in the questionnaire. As these results show, while most women are aware of the existence of EC, the information they are getting is either incomplete or isn't being properly withheld when provided. Objectively, most consider that EC could possibly relate to serious adverse effects or could compromise future fertility and were unaware of the time range of its effectiveness after UPSI. Very few knew that EC is free of charge in primary healthcare centres and hospitals. From the authors' perspective, this low level of effective knowledge essentially limits the use of EC in the case of UPSI. These results were consistent with other studies<sup>13,15</sup> which illustrate the need to improve patient education, especially in terms of accessibility, safety and time range of effectiveness.

In this study, age, educational level, parity and previous EC use were the factors which were significantly associated with a higher level of knowledge, with educational level being the one with strongest impact, as reported by other studies.<sup>13,15</sup> This strong association reveals that women who are more educated can have access to more sources of information and thus gain a higher level of knowledge and, ultimately, use.<sup>4,16</sup>

Most participants considered that it was important that availability of EC information should be improved, essentially through healthcare professionals instead of other sources. The same was found in another study,<sup>11</sup> with 80% revealing a need for more information, mainly by healthcare professionals. In this context, it seems important to reflect about the adequacy of information sources. The media, often the source of biased information, tends to override impartial and personalized information from healthcare professionals. Because of this, it seems important to the authors that healthcare professionals working in family planning services, particularly family doctors due to their greater proximity and trust, take every opportunity to give regular contraception counselling, including EC information, not only at the time of prescription.

For the authors, the fact that this evaluation study of the knowledge of female users of health care services about EC is one of the first conducted in Portugal, is seen as a

**Table 3** – Multivariate linear regression analysis to determine sociodemographic factors independently associated with EC knowledge

Characteristic	$\beta^a$ (95% IC)	<b>p</b>
Age (years)	-0.04 (-0.08; -0.002)	<b>0.038</b>
Marital status <sup>b</sup>	-0.58 (-1.21; 0.06)	0.075
Parity	0.37 (-0.002; 0.74)	<b>0.051</b>
Level of education	1.16 (0.81; 1.52)	<b>&lt; 0.001</b>
Professional situation	-0.01 (-0.51; 0.49)	0.965
Residential area	-0.10 (-0.59; 0.39)	0.687
Regular use of contraception	-0.22 (-0.75; 0.32)	0.427
Prior EC use	0.70 (0.16; 1.22)	<b>0.011</b>

<sup>a</sup> Possible range: 0 – 14, increasing value: highest level of EC knowledge

<sup>b</sup> Values: 0 for single/divorced and 1 for married/cohabiting couples

strength. Similar Portuguese studies found focus specifically in an adolescent population. On the other hand, this study allowed improvement strategies for information dissemination to be created alongside the healthcare centres of our target population, like the creation and provision of information leaflets. In future studies it may be interesting to compare these results with some obtained from sexually active women who do not attend family planning services. On the other hand, assessing women's knowledge level regarding recognition of a pregnancy after UPSI would be interesting. The effective use of EC in UPSI depends not only on EC knowledge, but also on recognition of the need for its use, as some studies have shown.<sup>3,15</sup>

This study should be interpreted with the following limitations: first, this study only considered female users of health care services and should be expanded to cover women requesting EC in other places where the characteristics of EC users may be different; secondly, the self-reported data could be associated to recall bias.

## CONCLUSION

Although Portugal is one of the countries where emergency contraception is accessible and available, this study showed that female users of healthcare services in Central Portugal were aware of the existence of emergency contraception, but they demonstrated a low level of knowledge about it, especially regarding the correct period of use, place of acquisition and safety issues.

## AUTHORS CONTRIBUTION

AR: Draft of the paper.

BV, DT, MJA, JC, ML, AR: Recruitment of patients and data aquisition.

IA: Recruitment of patients.

MCA, ISS: Data aquisition, critical review of the paper.

## PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in 2013.

## DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

## PATIENT CONSENT

Obtained.

## COMPETING INTERESTS

The authors have declared that no competing interests exist.

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## REFERENCES

1. Águas F, Bombas T, Pereira da Silva D. Evaluation on Portuguese women contraceptive practice. *Acta Obstet Ginecol Port.* 2016;10:184-92.
2. Direção Geral da Saúde. Divisão de Saúde Sexual, Reprodutiva, Infantil e Juvenil. Relatório dos Registos de Interrupção das Interrupções da gravidez. Lisboa: DGS;2018.
3. Baird DT, Cameron S, Evers JL, Gemzell-Danielsson K, Glasier A, Moreau C, et al. Emergency contraception. Widely available and effective but disappointing as a public health intervention: a review. *Hum Reprod.* 2015;30:751-60.
4. Neves J. *Contraceção.* 1<sup>a</sup> ed. Lisboa: Lidel – Edições técnicas, Lda; 2013.
5. Pacheco A, Costa AR, Martins I, Palma F, Sousa F, Almeida MC, et al. Recomendações sobre contraceção de emergência. Lisboa: Sociedade Portuguesa da Contraceção; 2017.
6. Portugal. Lei n.º 12/2001. Diário da República, I Série-A, n.º 124 (2001/05/29). p.3148.
7. Sorensen MB, Pedersen BL, Nyberg LE. Differences between users and non-users of emergency contraception after a recognized unprotected intercourse. *Contraception.* 2000;62:1-3.
8. Fitzpatrick E, Walton-Moss B. Barriers to emergency contraception for adolescents. *J Nurs Pract.* 2011;7:282-6.
9. Nunes MT. Conhecimento e utilização da contracepção de emergência em alunas do ensino secundário em Guimarães. *Rev Port Clin Geral.* 2005;21:247-56.
10. Fontes E, Guerreiro J, Costa T, Miranda A. Pattern of use of emergency oral contraception among Portuguese women. *Pharm World Sci.* 2010;32:496-502.
11. Nappi R, Abascal P, Mansour D, Rabe T, Shojai R. Use of and attitudes towards emergency contraception: A survey of women in five European countries. *Eur J Contracept Reprod Health Care.* 2014;19: 93-101.
12. Han L, Saavedra-Avendano B, Lambert W, Fu R, Rodriguez M, Edelman A, et al. Emergency contraception in Mexico: trends in knowledge and ever-use 2006–2014. *Matern Child Health J.* 2017;21:2132-9.
13. Rahman H, Khalda E, Kar S, Kharka L, Bhutia GP. Knowledge of, attitudes toward, and barriers to the practice of emergency contraception among women in Sikkim, India. *Int J Gynaecol Obstet.* 2013;122:99-103.
14. Bastianelli C, Rosato E, Farris M, Benagiano G. Emergency contraception: a survey of 1773 women. *Eur J Contracept Reprod Health Care.* 2016;21:455-61.
15. Picavet C, Van der Vlugt I, Wijsen C. Intention to use emergency contraceptive pills and the role of knowledge in a Dutch national sample. *Eur J Contracept Reprod Health Care.* 2014;19:250-8.
16. Westley E, Kapp N, Palermo T, Bleck J. A review of global access to emergency contraception. *Int J Gynecol Obstet.* 2013;123:4-6.