

Research

USE AND AWARENESS OF EMERGENCY HORMONAL CONTRACEPTION IN UNIVERSITY STUDENTS

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ABSTRACT

OBJECTIVE: To understand the use and awareness of EHC among university students.

MATERIALS AND METHODS: This cross-sectional descriptive observational study with a quantitative approach was conducted with a random sample of university students from Villavicencio using a self-administered survey. A description of the variables was performed, followed by a multinomial regression to evaluate possible associations with the non-use of HEC, obtaining OR. **RESULTS:** A total of 273 students were surveyed, out of whom 95.97% stated that they were aware of emergency hormonal contraception (EHC) and 4.03% were unaware. 59.34% students had previously used EHC, whereas 40.66% had not. On evaluation of the respondents' knowledge regarding EHC, it was found that 135 students (49.45%) possessed an acceptable level of knowledge of EHC, whereas 138 students (50.55%) did not pass the evaluation and possessed a very low level of knowledge regarding EHC. It is suggested in the results that there is more predisposition to the use of the EHC method in women (OR 1.89 CI 1.15-3.09, $p=0.00009$), and in those who have received counseling on contraception (OR 3.09 CI 1.88-5.07, $p=0.0000016$). **CONCLUSION:** The results of the survey suggest that the existing education and communication strategies regarding sexuality and contraceptive use for adolescents and young adults should be rethought.

Keywords (DeSC): knowledge, attitudes, practices, hormonal emergency contraception.

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INTRODUCTION

According to a report by the United Nations, there are 1.9 billion women of reproductive age (15–49 years) in the world as of 2019, among whom 1.1 billion are in need of family planning, i.e., they are either current contraceptive users or have an unmet need for family planning. Of these 1.1 billion women, 842 million use modern contraceptive methods, whereas 80 million use traditional contraceptive methods. In 2019, there were 17.2% women of reproductive age worldwide who wanted to avoid pregnancy but had no guaranteed access to any contraceptive method. Currently the proportion of women with an unmet need for family planning is 10%. The percentage of women using modern family planning methods (Sustainable Development Goals indicator SDG 3.7.1) increased from 74% to 76% between 2000 and 2019, particularly in vulnerable populations⁽¹⁾.

The majority of this unmet demand for family planning is seen to be focused on populations with critical social determinants of health, such as adolescents, people in poverty, inhabitants of rural areas and urban slums, people with HIV, and migrants. It has been estimated that 222 million women lack the provision of timely and relevant coverage of modern contraceptive methods, especially in places and populations with higher maternal and perinatal mortality rates than the world average⁽²⁾.

In Colombia, insurance coverage within the health system is 97%, in the urban population it is 74% and access to an educational system for children and adolescents is 92%. Since 2018, the

benefit plan of the Colombian health system has been the most comprehensive in the South American region, prioritizing children, adolescents, the elderly and pregnant women and including them in health promotion and disease prevention programs. that imply the elimination of economic access barriers, these health services do not require out-of-pocket payments⁽³⁾. However, this insurance universalization has not had an impact on the incidence of adolescent pregnancies, unplanned pregnancies, induced abortions, or sexually transmitted infections (STIs).

Emergency contraception (EC) refers to the contraceptive methods that women of reproductive age may require in cases of unprotected sex, contraceptive failure, improper contraceptive use, or rape. EC is recommended within 3 days of sexual intercourse (although it is most effective when used as soon as possible; if EC is used during the first 12 hours after unprotected intercourse, up to 95% effectiveness can be achieved) within which timeframe EC can prevent an unintended pregnancy; however, it cannot induce an abortion or affect a developing embryo since it interferes with the biological processes that occur prior to fertilization. Therefore, EC use should be occasional and should not replace regular contraceptive methods, especially since it does not provide protection against sexually transmitted diseases^(3, 4). EC can be hormonal through the use of combined estrogens and progesterone or progestin only or non-hormonal. The present study focuses on hormonal emergency contraception (HEC), which, as its name implies, should be used in emergency

situations and not as a regular or everyday method of contraception.

Unplanned pregnancy among adolescents of school age and college is a public health challenge. It is known that in adolescents (under 20 years of age) there is two and a half times more risk of maternal death and three times more probability of serious complications during pregnancy, childbirth and the puerperium. Conditions related to physiological and psychological immaturity and limited social and community support networks, in addition to the poor quality of care provided by the health system, which includes access barriers, obstetric violence and delays in care, constitute social determinants that pose a high health risk to adolescent and young adult women experiencing unwanted pregnancies. These risks are further increased if they face social conditions such as poverty, low educational level, domestic violence and armed conflict⁽⁵⁾.

Based on this reality, it is necessary to explore the available alternatives that ensure safer sex, one of which is EHC, a contraceptive method available in the health system's benefit plan. However, given the increase in adolescent pregnancy, it is believed that there is little knowledge about the use of EHC among the young and adolescent population. This research was carried out to know the prevalence of use and the level of knowledge about the EHC method among university students, including adolescents and young adults, to obtain information that allows the use of EHC in a safe and relevant way, as a way of contributing to responsible sexuality, the prevention of

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unplanned pregnancy and a better level of health in this population.

MATERIALS AND METHODS

This is a cross-sectional descriptive observational study with a quantitative approach performed with a random sample of university students from UCC Villavicencio. The sample size was calculated for an expected frequency of use of 70%, and the sample was stratified according to the number of students in each semester.

Inclusion criteria, being an active university student, being over 14 years of age or older, signing the informed consent. Exclusion criteria, having some type of cognitive disability, being under 14 years of age, not signing the informed consent. An informed consent form and survey were designed to evaluate the use and knowledge of EHC, and a pilot test was applied to 2% of the sample to fine-tune the instrument. The survey responses were entered in Excel and analyzed using Stata 12.

Univariate analysis was performed by evaluating the frequencies in the qualitative studies and estimating the measures of dispersion and central frequency for the quantitative studies. The frequencies were evaluated with a Chi² value of 95%. Bivariate analysis was performed to look for possible association hypotheses between the variables. The frequency of use and level of knowledge of EHC were estimated. This study was approved by the Ethics Committee of the Universidad Cooperativa de Colombia No. 047-2019, in accordance with the Colombian Research Regulations Resolution 8430 of 1993, and written

informed consent was obtained from all participants.

RESULTS

Of the 273 students who agreed to participate in the study and met the inclusion criteria, 56.04% were medical students, 12.45% dentistry students, 7.69% civil engineering students, 5.49% veterinary students, 5.13% psychology students, 3.66% law and nursing students, 2.56% accounting students, and 1.83% were administration students. The survey included people studying different careers, (56.04%) of the medical students reported having knowledge about the EHC method, followed by dentistry students (12.45%) and systems engineering (1.47%).

The average age of the respondents was 20 years (+/- 3.53 years), with a mode of 20 years +/- 3.53 years. Regarding the level of schooling of the students, 21.61% were in the third semester, 17.22% in the first semester and 16.48% in the fourth semester. The proportion of female students who reported having knowledge about EHC was 57.88% and that of male students was 42.12%.

Practices and knowledge

The average age of sexual intercourse initiation of the participants was 16 years (16 +/-3.96 years), with a minimum of 11 years and a maximum of 24 years, (median: 16 years, mode: 16 years). Regarding the use of contraceptive methods, 89.38% were using some form of contraception at the time the study was

conducted. The most common contraception method were condoms (62.95%), oral hormonal contraceptives (17.13%), injectable hormonal contraceptives (11.95%), subdermal device (5.98%), intrauterine device (1.20%), EHC (0.40%), and Pomeroy (used by one person; 0.40%) (Table 1).

Of the respondents, 95.97% reported being aware of EHC and only 4.03% reported being unaware and 59.34% of the participants had used EHC, whereas 40.66% had not.

Regarding the manner in which people came to know of EHC, 35.16% had been introduced to it via friends, 24.15% were made aware about it by a doctor, 15.94% by parents, 11.59% by teachers, and 4.76% by nurses.

The most well-known oral emergency contraceptives among the surveyed students were the progestin or levonogestrel and Yuzpe methods (34.43%).

Of the study population, 56.78% were aware that the morning-after pill worked by preventing fertilization, 23.44% believed it prevented implantation, 2.20% believed it induced an abortion, and 6.96% were not aware regarding its mechanism.

Of the participants, 62.27% knew that EHC should be taken within 72 hours after unprotected intercourse, 32.23% believed that EHC had to be taken 72 hours before unprotected intercourse, and 5.13% were not aware of the correct answer.

Table 1. *Use of contraception methods.*

Variables		n	%
Sex	Female	158	57.88
	Male	115	42.12
Sexual intercourse	Yes	260	95.24
	No	13	4.76
Used contraception	Yes	244	89.38
	No	29	10.62
Contraception method used	Condom	158	62.95
	Pills	43	17.13
	Injectables	30	11.95
	Subdermals	15	5.98
	Intrauterine devices	3	1.20
	Postday (Levonorgestrel)	1	0.40
	Pomeroy	1	0.40

In terms of EHC efficacy, 75.82% of the respondents stated that EHC reduced the risk of pregnancy by 80%, 10.99% believed that it prevented 100% pregnancies, and 3.30% believed that it reduced the risk of pregnancy by 40%.

The most relevant advantage of EHC for 89.74% of the respondents was that it prevented pregnancies, 3.30% also believed it prevented STIs, and 1.47% believed that EHC had no side effects.

Among the students, 73.63% believed EHC should be used in cases of rape and contraceptive method failure and 6.23% did not know in which situations they should use EHC. A total of 30.77% of the students did not know the side effects of EHC use and 43.59% believed the most frequent side effects to be nausea and vomiting.

Of the surveyed population, 53.48% bought contraceptives from pharmacies, 20.51% from family planning programs, 11.36% from their doctor's office, and 6.23% from the hospital (Table 2).

Respondents were also evaluated to determine their knowledge level regarding EHC. Based on 11 questions that evaluated their level of knowledge, those that answered 60% of the questions correctly were considered to have an acceptable or good level of knowledge regarding EHC. According to the evaluation, 135 participants (49.45%) had an acceptable or good knowledge of EHC and 138 participants (50.55%) did not pass the evaluation and demonstrated a very low or no knowledge of the method (Table 3).

Table 2. *EHC use and awareness.*

Variables		n	%
Awareness of EHC	Yes	262	95.97
	No	11	4.03
Used EHC previously	Yes	162	59.34
	No	111	40.66
Who made you aware about EHC?	Friends	96	35.16
	Doctor	63	23.08
	Teachers	45	16.48
	Parents	41	15.02
	Others	15	5.49
	Nurses	13	4.76
Types of EHC	A & B only	94	34.43
	Contraceptive Pills	68	24.91
	All	53	19.41
	Progestin	36	13.19
		22	8.06
Mechanism of EHC	Prevents Fertilization	155	56.78
	Prevents Implantation	64	23.44
	All	29	10.62
	Don't know	19	6.96
	Induces Abortion	6	2.20
Manner of administration EHC	Within 72 hrs. of unprotected intercourse	170	62.27
	72 hrs. before unprotected intercourse	88	32.23
	Don't know	14	5.13
		1	0.37
	Irrespective the time		
Side effects of EHC	Vomiting/nausea	119	43.59
	Don't know	84	30.77
	All	31	11.36
	None	25	9.16
	Fever	7	2.56
	Headache	5	1.83
	Toxic polyneuritis	2	0.73

Place of obtaining EHC	Pharmacy	146	53.48
	Family planning	56	20.51
	Medical consult	31	11.36
	Unknown	23	8.42
	Hospital	17	6.23
Effectiveness of EHC	Prevents pregnancy by 80%	207	75.82
		30	10.99
	Prevents pregnancy by 100%	27	9.89
		9	3.30
	Prevents pregnancy by 40% Don't know		
Advantages of EHC	Prevents pregnancy A and B	245	89.74
		15	5.49
	Prevents STDs	9	3.30
	Don't know	4	1.47
When to use EHC	Rape	15	5.49
	Failure of other methods	40	14.65
		201	73.63
	Both are correct	17	6.23
	Don't know		

Table 3. Overall knowledge of contraceptive methods.

Qualification interval	Number	Women		Men	
		Frequency	%	Frequency	%
Low (0–3)	138	69	43.39	69	60.52
Elevated (3–5)	135	90	56.61	45	39.48
Total number of people		159		114	

Bivariate analysis

Bivariate analysis was performed by taking the use or non-use of the method as the result variable and cross-referencing them in 2×2 tables with the factors under study to search for causal associations of possible risk or protective factors for subsequent analytical studies and obtaining a prevalence odds ratio (OR). From this, we found the highest probability of use of being female (OR: 1.89, confidence interval 95% [CI]: 1.15–3.09), using some form of contraceptive

method (OR: 2.26, CI: 1.03–4.94), and to know about of EHC (OR: 3.09, CI: 1.88–5.07) (Table 4).

DISCUSSION

EHC methods have been available in the Colombian health system since 2007, when the progestin-only option was included in addition to Yuzpe, which had been available since 2000 ⁽⁶⁾. However, it is not reflected in a regular use of EHC among university students, which in our study was less than 60%. Another study

Table 4. *Bivariate analysis.*

Variable	EHC USE			
	Risk	OR	CI 95%	p
Career path	Not in the health field	1.45	0.84–2.53	0.499
Level of study	<5 semesters	1.06	0.63–1.79	0.201
Age	<18 years	0.55	0.31–0.98	0.425
Sex	Female	1.89	1.15–3.09	0,011
Age of sexual intercourse initiation	<14 years	1.25	0.3–5.15	0.011
Contraception	Use	2.26	1.03–4.94	0.037
Who told you about EHC	Others	1.05	0.55–1.97	0.001
Knows about of EHC	Don't know	3.09	1.88–5.07	0.424

EHC: Emergency hormonal contraception, OR: odds ratio, CI: confidence interval.

with university students from Bogotá presented similar findings ⁽⁷⁾, wherein despite the fact that 90% of the participants stated they were aware of the method, 6% considered it to be a routine method. Similar results were also reported by Acevedo⁽⁸⁾ and Meneses⁽⁹⁾ in adolescent university populations.

The participants of this study stated the most common contraceptive method to be condoms, followed by oral contraceptives, which coincides with studies conducted in Spain and Denmark ^(10, 11). In our study, 56.78% of the students understood the mechanism of action of EHC, as well as the method's administration time post-intercourse, which is similar to results of studies conducted in Colombia (Fusagasugá and Bucaramanga) and Brazil. These results reveal a high risk of inappropriate EHC use, as previously warned by the World Health Organization^(12,13,14).

Of the study participants, 54% obtain their EHC from pharmacies, representing an additional out-of-pocket expense, when it should be easily obtained from the health system. This suggests the presence of barriers to access to contraceptives within the health system or the community. active presence of myths or stigmatization about adolescent sexuality, as has been reported in studies with adolescent mothers with unplanned pregnancies.

This shows that there are important administrative, economic, and cultural barriers that should be investigated to overcome the obstacles in accessing contraceptive methods, which can alter an adolescent's life projection, the full enjoyment of their sexuality, and their relationship with their partner^(15, 16, 17, 18).

Bivariate analysis showed that there was a greater predisposition to the use of EHC methods in women and in

those who have received contraceptive counseling, which implies that the health system should implement strategies to improve the population's knowledge and access to contraceptive methods, as evidenced in studies in Scandinavia and the USA^(19, 20, 21).

This study has the same limitations that are inherent to surveys of individual's private lives, wherein there are information biases; however, it reveals crucial deficiencies of the Colombian health system regarding the promotion of responsible and safe sexuality, as well as in the prevention of unplanned pregnancies and adolescent motherhood.

It is suggested that the education and communication strategies that have been applied till date regarding sexuality and contraceptive methods for the adolescent and young adult population should be rethought to provide greater knowledge so that, using their autonomy, this population can decide when, how, and which contraceptive method to use. Such strategies have had a great impact in countries such as the USA, Nigeria, and Ethiopia^(21, 22, 23, 24).

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