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Knowledge About Contraceptives in Medical Students

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Abstract

Background: *The low prevalence of family planning may be due to multiple factors, including limited access to information, which leads to the need for programs to be carried out by adequately trained personnel.*

Aim: *Determine the level of knowledge about contraceptive methods in medical students (clinical cycle) at a private university in Antioquia, Colombia.*

Methods: *A descriptive cross-sectional study carried out during the first semester of 2021 in 152 students enrolled between the fifth and tenth semester of medicine at the Faculty of Medicine of the San Martín University Foundation, Sabaneta headquarters, who completed an instrument composed of a test of knowledge about contraceptive methods (30 questions distributed in 4 categories) and a self-assessment questionnaire about your level of knowledge on the topic. Two analyses of variance (ANOVA) were carried out to compare the average percentages of correct answers in the knowledge test according to the semester and the average percentages of correct answers, regardless of the semester, in the four established categories.*

Results: *The overall success rate for the knowledge test was 61.30%; the best score was obtained in the tenth semester with 63.30%, and the semesters with the lowest performance were the seventh and eighth, both with 59.70%. In the self-assessment part, 50.10% reported having good knowledge about oral contraceptives, 55.40% in barrier methods, and 38.70% in emergency methods.*

Conclusion: *The knowledge of medical students about contraceptive methods is insufficient for someone who will practice as a health professional in the future. Therefore, the San Martín University Foundation must design and implement strategies to improve their knowledge level in this regard so that, during their clinical practice, they can provide better education on this topic*

Keywords: Contraceptive Agents, Students, knowledge, Health, Reproductive Health (MeSH).

Abbreviations

- **WHO:** World Health Organization
- **IUD:** intrauterine device

Introduction

Family planning refers to all those practices aimed at controlling sexual reproduction through the use of contraceptive methods, guaranteeing the right of people to decide on the number of children they want to have. In this context, information and services on contraceptive methods represent a fundamental axis for health and human rights [1].

According to WHO statistics for the year 2019, the number of women of reproductive age (between 15 and 49 years) globally

was close to 1.9 billion, of which 14% had unmet needs in terms of contraception [2]. In 2022, the global contraceptive prevalence of any method was 65%, and that of modern methods was 58.7% [3].

In Latin America, the prevalence rate of contraceptive methods of any type is 74%, and in the Caribbean, 61% [4]. In the case of Colombia, 20% of women between 15 and 49 years old and 39.5% of adolescents with a partner do not use contraceptive methods [5]. In the National Demographic and Health Survey, it is reported that although 100% of the Colombian population knows about contraceptive methods, 36.6% of women and 27.7% of men do not use any method [6].

Multiple factors could explain the low prevalence of family planning, some related to access to planning methods. For example, in 2021, the United Nations Population Fund reported that almost 12 million women were unable to access methods due to causes related to the COVID-19 pandemic [7].

On the other hand, another of the factors postulated regarding the low prevalence of family planning may be related to religious beliefs, level of education, and access to information. A study carried out in four Latin American countries in 2020 ensures that belonging to the Catholic or Christian religion is directly linked to a lower use of planning methods, such as condoms, the rhythm method, and oral contraception, compared to the rest of the participants [8]. Concerning education, Sánchez & Leyva found that people with higher academic degrees are more likely to use contraceptives than those who only have primary school. On the other hand, a study carried out in 2019 by the World Health Organization revealed that in 36 countries, one in four unplanned pregnancies occurred due to abandonment of the contraceptive method, explained by fear of its side effects and health problems or by underestimating the probability of conception [9]. It has been reported that there is inequality in access to information since little guidance is received at the time of medical consultation, which leads to the need to establish contraception programs with properly trained personnel [10].

Some studies address the problem in relation to the knowledge of contraceptive methods that medical students or those in careers related to the health area have. In Latin America, Bravo et al. studied the level of knowledge of contraceptive methods in medical and nursing students in Ecuador in 2020, finding high performance.

In contrast, students of basic medical sciences at a university in Lima, Peru showed insufficient knowledge [11]. Leon Larios and collaborators assure that among young nursing students the level of knowledge was good and was supported by positive attitudes towards the use of these methods; However, it was insufficient or poor among students who had not received any training during their degree [12].

In 2018, more than 90% of the medical students surveyed at the Central University of Ecuador knew about contraceptive methods [13]. Finally, Moreno and Sepulveda assure that the level of knowledge of medical and nursing students in the city of Manizales is insufficient.

However, no studies have investigated this problem among health sciences students in Antioquia. In this sense, the present study seeks to describe the knowledge about contraceptive methods in the San Martín University Foundation medical school, Saba neta headquarters in Antioquia-Colombia.

Materials and Methods

Type of Study and Sample

A descriptive cross-sectional study was carried out during the first semester of 2021 in 152 students enrolled between the fifth and tenth semester of medicine at the Faculty of Medicine of the San Martín University Foundation. A random probabilistic sampling stratified by semester and sex was carried out. The sample size was obtained from a universe of 300 students using the formula:

$$n = \frac{N \cdot Z^2 \cdot p \cdot (1-p)}{(N-1) \cdot e^2 + Z^2 \cdot p \cdot (1-p)}$$

With a margin of error of 5%, an estimated prevalence of 50%, and a reliability level of 95%, the sample size was 169 participants chosen randomly from those who were enrolled in the clinical cycle at the end of the selection of the students, they were scheduled at specific times to be surveyed, 17 of them did not attend, so the final sample size was 152 students.

Procedures

The study was based on the analysis of a survey addressed to each participant, the answers were filled out by the researchers in a Google forms as the participants were surveyed one by one. All participants received written informed consent after the verbal explanation of the project; It was announced that participation was voluntary and after each student signed, the instrument was applied. The information obtained was available only to the researchers under the administration of the principal investigator.

The knowledge that the students had was evaluated in two ways. A self-assessment consisting of 4 questions, in which they were asked to subjectively rate their knowledge regarding four types of contraceptive methods (oral contraceptives, emergency methods, intrauterine device [IUD], and barrier methods). Students had to indicate their level of knowledge qualitatively on a scale that consisted of the following categories: very good, good, average, little, and insufficient knowledge. The second part of the instrument was composed of a knowledge test of 30 objective questions with multiple response options and true and false in different categories (generalities, effectiveness, mechanism of action, and contraindications); the number of questions was divided into 8, 7, 7, and 8 respectively.

Description of Variables

Using the instrument, data were collected on the following variables: level of knowledge (defined as the level of knowledge about contraceptives of the students surveyed), sex, semester, and age (in years), which were categorized into four groups: 18-20 years, 20-24 years, 25-29 years, and >30 years.

Statistical Analysis

The collected data were entered into a database created in Microsoft Excel for subsequent analysis. Data are described using absolute frequencies, percentages, and means. In addition, two ANOVA tests were carried out, calculated in the free openness software, one to determine the differences between the average

percentages of correct answers in the 30-question knowledge test according to the student's semester and another to determine the differences between the percentages. Average of correct answers, regardless of the semester, in the four established knowledge categories. A significance level of ($p<0.05$) was considered.

Ethical Considerations

The study was approved by the Research Committee of the San Martin University Foundation, through evaluation report No. 2021-03-001 of March 8, 2021. The ethical principles of biomedical research in human beings of the Declaration of Helsinki were followed [14]. and the scientific, technical, and administrative standards of health research of Resolution 8430 of 1993, issued by the Ministry of Health of Colombia, guaranteed the protection and anonymity of the participants' data and its exclusive use for this purpose—investigation in compliance with the provisions of said Resolution [15]. Informed consent was obtained from all participants.

Results

Of the 152 participants, 67.10% (102) were female and 32.89% (50/152) were male. Regarding the semesters taken, 14.47% (22) belonged to the fifth semester, 19.08% (29) to the sixth, 13.16% (20) to the seventh, 21.71% (33) to the eighth, 22.37% (34) to the ninth and 9.21% (14) in the tenth semester. The most representative age groups were 20-24 years with 86.84% (132/152), followed by 25-29 years with 7.24% (11/152) and 18-20 years with 3.29% (5/152). (Table 1).

Table 1: Sociodemographic Variables of the Students.

Variable		Frequency	%
Age	18-20	5	3.29
	20-24	132	86.84
	25-29	eleven	7.24
	>30	4	2.63
	TOTAL	152.0	100
Sex	Female	102	67.11
	Male	fifty	32.89
	TOTAL	152	100
Semester	5	22	14.47
	6	29	19.08
	7	twenty	13.16
	8	33	21.71
	9	3. 4	22.37
	10	14	9.21
	TOTAL	152	100.0

Source: self-made.

Table 2 shows the self-assessment results regarding knowledge of the different types of most widespread contraceptive methods. Regarding oral contraceptives, the average of students who reported having a good level of knowledge was 49.89%, followed by 24.51% for a fair level of knowledge and 12.83% for very good.

Table 2: Self-Assessment of the Level of Subjective knowledge of the Different Types of Contraceptive Methods

Semester		5 (n=22)	6 (n=29)	7 (n=20)	8 (n=33)	9 (n=34()	10 (n=14)	Half
Oral Contraceptives	Very good	13.64	3.45	0.00	21.21	2.96	35.71	12.83
	Well	54.55	58.62	38.75	54.55	49.98	42.86	49.89
	Regular	22.73	34.48	20.23	24.24	38.24	7.14	24.51
	Bit	4.55	3.45	35.15	0.00	5.88	7.14	9.36
	Insufficient	4.53	0.00	5.87	0.00	2.94	7.15	3.42
Emergency methods	Very good	11.23	8.02	0.00	7.14	2.11	27.13	9.27
	Well	32.42	44.27	24.67	37.22	50.03	42.07	38.45
	Regular	32.32	37.28	25.15	45.08	31.25	12.18	30.54
	Bit	19.02	3.21	40.12	9.54	7.14	1.35	13.40
	Insufficient	5.01	7.22	10.06	1.02	9.47	17.27	8.34

Intrauterine device (IUD)	Very good	11.03	2.23	1.01	9.42	1.32	28.11	8.85
	Well	22.45	33.15	5.37	28.12	27.34	21.02	22.91
	Regular	18.23	48.32	34.12	51.21	47.23	42.56	40.28
	Bit	38.28	10.21	39.36	7.08	17.01	8.31	20.04
	Insufficient	10.01	6.09	20.14	4.17	7.10	0.00	7.92
Barrier methods	Very good	27.27	6.89	10.04	42.43	11.76	17.71	19.35
	Well	63.64	48.28	54.05	45.45	55.88	62.16	54.91
	Regular	9.09	20.69	30.64	12.12	23.53	16.18	18.71
	Bit	0.00	6.90	5.27	0.00	5.88	0.00	3.01
	Insufficient	0.00	17.24	0.00	0.00	2.95	3.95	4.02

The Values Expressed in the Table Belong to Percentages
Source: self-made.

When asked to self-assess their knowledge about emergency methods, 38.45% claimed to have a good level, 30.54% average, and 13.40% poor.

Regarding the intrauterine device, 40.28% classified their knowledge as fair, followed by 22.91% as good and 20.04% as little. Regarding barrier contraceptive methods, an average of 54.91% evaluated themselves with a good level of knowledge, 19.35% with a very good level and only 18.71% with regular knowledge.

Table 3 shows the percentages of correct answers in the knowledge test, where 30 questions grouped by category were asked (8 for contraindications and generalities, respectively, and 7 for each of the categories of effectiveness and mechanisms of action). The average overall performance of all semesters was 61.38%. The category with the highest number of correct answers was action mechanisms (74.94%), and the semesters that performed best in that category were eighth and fifth, with 80.46% and 80.04—of correct answers, followed by tenth with 79.30%.

Table 3: Knowledge Test by Categories

	5	6	7	8	9	10	Semester batting average 5-10
Generalities	60.43	62.13	65.51	64.73	69.63	66.72	64.86
Mechanism of action	80.04	70.55	65.22	80.46	74.08	79.30	74.94
Effectiveness	45.51	55.28	50.01	36.40	55.91	42.92	47.67
Contraindications	53.77	62.01	58.84	57.71	52.12	64.38	58.13
Total correct answers in the test	59.94	62.49	59.90	59.83	62.94	63.33	61.38

The Values Expressed in the Table Belong to Percentages.
Source: self-made.

The category with the lowest overall performance was effectiveness, with an average of 47.67% correct questions. The semester with the highest number of correct answers was ninth (55.91%), followed by sixth (55.28%) and seventh (50.01%).

For the generality's category, the overall average was 64.86%, with a greater number of correct answers in ninth (69.63%) and tenth (66.72%), followed by seventh with 65.51%.

In contraindications, the overall performance was 58.13%, and the semesters with the highest number of correct answers were tenth (64.38%), sixth (62.01%), and seventh (58.84%).

Regarding the ANOVA, a significant difference was not observed between the average percentage of correct answers in the 30-question test according to the student's semester (p=0.8). Still, there was a significant difference between the average percentage of correct answers. Obtained in the four categories (p less than 0.001), The biggest difference is in favor of the mechanisms of action category, followed by generalities, contraindications, and efficacy.

Discussion

During the application of the instrument, in the self-assessment, the students rated themselves as having very good knowledge in the categories of oral contraceptives and barrier methods, with 62.72% and 74.26%, respectively. This can be explained because oral pills are the most used contraceptive method among women and condoms among men, which reflects a greater need among students to know about barrier methods and hormonal pills [16-18].

Moreno and Sepúlveda conducted a study in the city of Manizales in which they evaluated the knowledge of contraceptive practices of 140 medical students and 134 nursing students. The general rating

of the questions, out of a maximum possible rating of 5.0, presented an average of 2.557 for the first clinical case form and 2.146 for the second, which consisted of 20 questions. In the present study, similar results were found since the overall accuracy average was 61.38%, which, on a rating scale of 0-5, corresponded to 3.0. However, it is still insufficient for someone who will work as a contraceptive educator in the future, similar to what was found in medical and nursing students at two Spanish universities [19].

When asked to self-assess their knowledge about emergency methods, 38.45% claimed to have a good level, 30.54% were fair, and 13.40% were poor. This is comparable with a study carried out among nursing and medicine students at the University of Seville, in which knowledge proved insufficient, showing a higher level among students who had previously used the emergency pill. Regarding the intrauterine device, 40.28% rate their knowledge as regular, similar to a study by Deborah Bartz and collaborators, who found significant gaps in medical students' knowledge regarding intrauterine devices [20]. Despite completing the internship in gynecology and obstetrics.

In the present study, a significant difference was observed between the average percentage of correct answers in each category ($p<0.001$), where the highest average percentage of correct answers was observed in the mechanisms of action category (74.94%). This figure could be explained by the greater emphasis placed on the mechanism of action of medications in the pharmacology class of medical students at the San Martín University Foundation in the third semester. On the contrary, in the categories in which less emphasis is placed, they obtained a lower performance, which in this case were contraindications and effectiveness with 58.13 % and 47.67%, considering that the treatments' effectiveness is not an objective. Of the pharmacology course.

On the other hand, it is to be expected that the longer the semester, the higher the level of knowledge. However, according to the ANOVA, there were no significant differences between the average percentages of correct answers in the knowledge test according to the student's semester ($p=0.8$), with the lowest percentage observed in semester 7 (59.90%). And 8 (59.83%) and the highest at 10 (63.33%). In this sense, the lower performance in the seventh and eighth semester compared to the fifth and sixth students could be explained by the fact that in the medicine program at the San Martín University Foundation, in the fifth and sixth semester, knowledge about contraceptive methods is reinforced in mother-child rotations where prenatal check-ups are carried out. In contrast, at another university they classified the level of knowledge by semester, finding a significant relationship between the semester taken and a higher level of knowledge [21].

It is recognized as a limitation of the study that although the sample calculation is representative of the Universe of the San Martín University Foundation, not all the selected students responded to the call, in addition to having been carried out in a single faculty and a single career of the health.

Conclusions

Medical students' knowledge of contraceptive methods is insufficient for someone who will practice as a health professional in the future. There is a need for greater sexual health education for future physicians and the general public [22]. Therefore, it is necessary for the San Martín University Foundation to design and implement strategies aimed at improving their level of knowledge on this topic so that, once they graduate, they can provide better education in this regard during their clinical practice.

Furthermore, although the vast majority of students during the self-assessment reported having good to very good knowledge about contraceptive methods, their level of knowledge in the test proved to be insufficient.

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None declared by the authors.

Conflicts of Interest

None declared by the authors

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