



## The influence of contraceptive methods on birth: a study in the central western region of Paraná

*A influência dos métodos contraceptivos na natalidade: estudo no centro-oeste do Paraná*

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### ABSTRACT

A quantitative, cross-sectional study, aimed at exploring the associations between the knowledge about contraceptive methods and the outcomes desired by women who attend the SUS. It was conducted with 54 women from 20 to 63 years old in a specialty outpatient clinic and Basic Health Units. Data analysis used descriptive statistics, dispersion and location measures, and association tests (Odds Ratio). The Chi-Square test demonstrated that the use of contraceptives allows planning for children when compared to not using them. The Chi-Square associations showed that the use of contraceptives prevented unplanned children much more and had an impact on the number of births, favoring the prevention of pregnancy, and when two or more contraceptive methods were combined, it resulted in fewer unplanned children, up to zero. Adequate use of contraceptive methods has a strong association with the number of births, and it made planning for children possible.

**Keywords:** Contraception. Health Status Disparities. Family Development Planning. Public Health. Women's Health.

### RESUMO

Estudo quantitativo, transversal, com o objetivo de explorar as associações entre o conhecimento sobre métodos contraceptivos e os desfechos desejados por mulheres que frequentam o SUS. Conduzido com 54 mulheres entre 20 e 63 anos em um ambulatório de especialidades e Unidades Básicas de Saúde. A análise de dados utilizou estatística descritiva, medidas de dispersão e locação e testes de associação (Odds Ratio). O teste Qui-Quadrado demonstrou que o uso de contraceptivos permite o planejamento de filhos quando comparado ao não uso. As associações Qui-Quadrado mostraram que o uso de contraceptivo evitou muito mais os filhos não planejados e teve impacto no número de partos, favorecendo a prevenção da gestação, e quando combinados dois ou mais métodos contraceptivos, resultou no menor número de filhos não planejados, até o nível zero. O uso adequado dos métodos anticoncepcionais tem forte associação com número de partos e possibilitou o planejamento de filhos.

**Palavras-chave:** Anticoncepção. Disparidades nos níveis de saúde. Planejamento familiar. Saúde pública. Saúde da mulher.

## INTRODUCTION

Contraceptive methods are important for preventing unwanted pregnancies and controlling the transmission of sexually transmitted infections (STIs). There are several contraceptive method options available, including condoms, birth control pills, intrauterine devices (IUDs), patches, rings and injections<sup>1</sup>.

Oral contraceptives (OC) are among the most used birth control methods worldwide. It is estimated that 100 million women use this method, which is characterized by its high effectiveness. In Brazil, it is estimated that approximately 27% of women of childbearing age use OC<sup>2,3</sup>. Although these are among the most used contraceptives, patient education is not well studied in women of childbearing age<sup>4</sup>.

In recent decades, Brazil has seen a significant drop in fertility, as have several Latin American countries. Data show that the fertility rate of 6.3 children in 1960 was projected to be 1.7 children per woman in 2015<sup>5</sup>. However, this reduction occurred in different ways among social classes. Firstly, amid women with higher education and living in urban areas. This inequality can be observed in Brazil based on data from the 2010 Census, which demonstrated a fertility rate in the least developed regions of the country, North and Northeast, of 2.4 and 2.0 children respectively, while in the most developed regions, South and Southeast, there were 1.8 and 1.7 children per woman<sup>6</sup>.

The use of contraceptive methods is influenced by economic, cultural, anthropological and biological factors<sup>7</sup>. The women who plan their pregnancies are, in the majority, white, with higher education, over 35 years of age, in a steady relationship<sup>8</sup>. Sexual and reproductive health is defined as the freedom of women and men to enjoy their sexuality, safely and without constraints, having autonomy to decide when and how often they want to reproduce, and if do not want to have children, having the right to access effective and safe methods for contraception<sup>9</sup>.

The misuse of contraceptive methods results in an estimated eight pregnancies for every 100 users/year, and the rate can be reduced by less than one pregnancy for 100 women/year when used properly<sup>7,10</sup>. In addition to the method's

failure itself, ineffective use of contraceptives is also relevant to side effects, causing many women to discontinue their use<sup>11</sup>.

Worldwide, 1.1 billion people need family planning, 842 million use contraceptive methods and 270 million people are not covered<sup>12</sup>. In Brazil, among the most used contraception methods are female sterilization (25.9%) and the oral pill (27.4%). The use of condoms and emergency pills has increased in the last decade<sup>13</sup> but is still insufficient. When these methods are used correctly, unplanned pregnancy and maternal mortality rates are drastically reduced<sup>14</sup>.

Unwanted pregnancy can negatively interfere and bring harm to the physical and mental health of women and couples, while contraception leads to family planning. Family planning promotes a reduction in maternal and infant mortality, prevents teenage pregnancy, increases the spacing between pregnancies, and avoids unsafe abortions<sup>15</sup>.

Exploring the associations between knowledge of contraceptive methods and birth outcomes allows us to understand if contraceptive methods provide reproductive autonomy and quality of life by influencing birth rates, in addition to providing valuable contributions to public policies and reproductive health programs.

A knowledge gap has been identified regarding contraceptive methods and their impact on birth rates in a regional context, in this case, the Midwest region of Paraná. Therefore, the relevance of this study is reinforced by its significant implications for public health and the well-being of women, as unplanned pregnancy can result in adverse consequences for maternal and infant health, complications during pregnancy and childbirth, increased morbidity and mortality of the mother-child pair, and higher rates of unsafe abortion.

In addition to the factors mentioned above, unplanned pregnancies can have social and economic implications, negative impacts on education, employment, financial stability, overload of public health systems, and increased healthcare costs. Therefore, understanding the effects of knowledge about contraceptive methods on birth rates is crucial for informing policies and programs to promote the health and

well-being of women at risk of unplanned pregnancies.

Based on the outlined issue, the research aimed to identify the epidemiological profile and explore its associations between knowledge and use of contraceptive methods, number of children, and unwanted pregnancies among sexually active women who attend the Unified Health System (SUS).

## METHODOLOGY

### STUDY DESIGN

This is a quantitative, cross-sectional study conducted at the outpatient clinic of the Integrado University Center in Campo Mourão, Paraná, and at Basic Health Units (UBS) in this municipality, where supervised curricular internships in Family and Community Medicine are carried out. The study was conducted after obtaining approval from the units - Campo Mourão Municipal Government and Integrado University Center.

### STUDY PARTICIPANTS

A total of 54 women aged 18 and above, without age limit, were interviewed. They were attending the specialty outpatient clinic of the Medical School of the researchers' institution and UBS in the same municipality, where supervised curricular internships in Family and Community Medicine are conducted. These women were referred by the health region to the specialty outpatient clinic and were at the UBS for consultation or appointments.

The participants were invited by the researchers to take part in the study, and after accepting, given the sensitivity of the topic, the interviews were conducted in private rooms to ensure comfort and confidentiality. Data collection took place at different times from the participants' internship assignments. The sample consisted of women who met the inclusion criteria and consented through the Consent Form (CF). Participant selection occurred during the designated data collection period, using a convenience sampling method and on a voluntary basis.

### DATA COLLECTION INSTRUMENT AND PROCEDURE

The data collection instrument, a questionnaire via Google Forms®, with 34 objective questions, was developed by the researchers and underwent validation after a pilot test conducted by five students in different services chosen for data collection. After the pilot test, meetings were held via Google Meet® and necessary adjustments were made to improve the instrument. Ten questions were excluded to eliminate redundancies, and the remaining questions were divided into blocks depending on the topic.

The instrument in its entirety addressed sociodemographic profile, contraceptive methods used, characterization of sexual life, unplanned pregnancies, STIs, and knowledge about contraceptive use. The data collection was conducted by four medical students from different semesters, properly trained by the supervisor to conduct interviews on sensitive subjects. Guidance sessions were conducted in one face-to-face meeting and two online meetings.

The students conducted the interviews individually in their internship region, wearing lab coats identified with their names and the institution, and introducing themselves as medical students. Participants were recruited in the waiting room of the outpatient clinic and UBS and then led to a more private setting facilitated by the in-charge nurse.

Data collection followed the protocols established by the research ethics committee. Participants were properly informed about the potential risks and discomforts associated with the research, such as personal exposure, embarrassment due to the type of questions, anxiety, and feelings of distress. Additionally, the benefits of the research were highlighted, including contributions to public policies such as family planning, dissemination of information about contraceptive methods, the possibility of discovering new contraceptive methods and breaking taboos.

## STATISTICAL ANALYSIS

The collected data underwent statistical analysis and were correlated. For data analysis, the Statistical Package for the Social Sciences (SPSS®, IBM, version 25) was used. The data were descriptively expressed as mean  $\pm$  standard deviation or as frequency and absolute percentage. For inferential analysis, a normality test (Shapiro-Wilk) was performed to determine the sample distribution. Subsequently, the Chi-square test was used to analyze frequency distribution, and when possible, adjusted by the Odds Ratio through the Mantel-Haenszel test. The significance level adopted for the statistical test was 5% ( $P < 0.05$ ).

## ETHICAL ASPECTS

The project was approved by the Research Ethics Committee of the Integrado University Center of Campo Mourão, CAAE number 68632723.7.0000.0092, on May 10<sup>th</sup>, 2023, under opinion number 6,051,655, and was authorized by the municipal health department.

After guiding the participants to a more private environment, the Consent Form (CF) was shown, emphasizing the objectives, benefits, and possible risks of the study. The participants' contribution to the research was highlighted, allowing them to make an aware decision about their participation. The assurance of confidentiality of information and voluntary participation was provided, and participants were informed that they had the freedom to withdraw their consent at any time without negative repercussions.

## INCLUSION CRITERIA

The study included women aged 18 years and older, without age limit, who were currently using or had previously used contraceptive methods and who attended the research locations, agreeing to the terms of the investigation.

## EXCLUSION CRITERIA

Women under 18 years of age, those who had never used contraceptive methods, and those

who chose not to participate in the research were excluded from the study.

## STUDY LIMITATIONS

As limitations of the study, are the cross-sectional study design and the sample being subject to selection bias, as participants were recruited from only a few of the many UBS in the region, preventing the generalization of results to other populations. This difference may have reflected variations in the level of education and family income, which need to be considered when interpreting the results.

To mitigate these limitations, we considered the average age of the participants, utilizing the data collection time frame that coincided with prenatal consultations at the UBS, where we found a significant concentration of women of childbearing age. Furthermore, we carefully standardized interview procedures and scripts. We adopted rigorous statistical analyses to control potential confounding variables and investigate relevant associations between the variables of interest.

## RESULTS

The study presents the sociodemographic profile of the female participants, with an average age of 40.4 years. Most married (53.7%) and employed (59.9%), with a mean income higher than the national average. They had a higher education level (22.2%), also above the national average. A total of 40.7% of the interviewees were using some type of contraceptive method; however, a greater number (56.6%) expressed the intention to avoid pregnancy. The results showed a suitable knowledge of contraceptive methods in the studied sample. Twenty-one users (52.5%) who planned their pregnancies reported using some type of contraceptive method for this purpose. On the other hand, many women were observed not using any contraceptive method as part of their reproductive planning (59.3%).

A total of 54 women who attended the outpatient clinic at the Integrado University Center and the UBS, with ages ranging from 20 to 63 years old and an average of 40.4 years old,

participated in the research. Regarding the sociodemographic profile, the participants made a homogeneous group regarding marital status, with the majority being married (53.7%), and the minority being single or divorced/widowed. Women were employed (32 - 59.9%), with an income between one and three minimum wages (31 - 53.7%). A considerable part of them were in the job market, with an average income above the national average, which was R\$ 2,068.7216, and a significant number had higher education (12 - 22.2%), exceeding the national average of 19.4%<sup>17</sup>.

Among the interviewed women, 22 of them (40.7%; table 02) were using some type of contraceptive method; however, a number greater than this, 30 (56.6%), expressed the intention to avoid pregnancy. A suitable knowledge about contraceptive methods was observed in the studied sample. A total of 21 users (52.5%) who planned their pregnancies reported using some type of contraceptive method for this purpose. On the other hand, a large number of women were observed not adopting any contraceptive method as part of their reproductive planning (32; 59.3%; table 03).

**Table 1.** Sociodemographic description of study participants (n=54).

	Mean	±SD
<b>Age (years)</b>	40,4	12.78
<b>Occupation</b>	Frequency	%
- Employed	32	59.3%
- Unemployed	16	29.6%
- Student	3	5.6%
- Other	3	5.6%
<b>Marital Status</b>	Frequency	%
- Single	20	37%
- Married	29	53.7%
- Divorced/Widowed	5	8.6%
<b>Family Income</b>	Frequency	%
- Up to 1 minimum wage	8	13.8%
- 1 to 3 minimum wages	31	53.4%
- 3 to 5 minimum wages	12	20.7%
- Over 5 minimum wages	3	5.2%
<b>Schooling</b>	Frequency	%
- Elementary	18	33.3%
- High School	15	27.8%
- Unfinished Undergraduate	9	16.7%
- Undergraduate degree	12	22.2%

Source: The influence of contraceptive methods on birth: a study in the central western region of Paraná, Integrado University Center, 2023.

**Table 02.** Description of the use of contraceptives, pregnancy prevention and use of contraceptives when planning children (n = 54).

<b>Contraceptive use</b>	Frequency	%
- Yes	22	40.7%
- No	32	59.3%
<b>Prevent pregnancy</b>	Frequency	%
- Yes	30	56.6%
- No	23	43.4%
<b>Planning – use of contraceptives</b>	Frequency	%
- Yes	21	52.5%
- No	19	47.5%

Source: The influence of contraceptive methods on birth: a study in the central western region of Paraná, Integrado University Center, 2023.

**Table 03.** Frequency of contraceptive use by intake time, length of use and prescription (n = 54).

<b>Pill intake at the same time</b>	Frequency	%
- Yes	37	68.5%
- No	17	31.5%
<b>Contraceptive length of use</b>	Frequency	%
- None	4	7.4%
- Less than 1 year	6	11.1%
- 1-3 years	42	77.8%
- More then 3 years	2	3.7%
<b>Method prescription</b>	Frequency	%
- Medical doctor	33	56.9%
- Family/Friendss	21	36.2%

Source: The influence of contraceptive methods on birth: a study in the central western region of Paraná, Integrado University Center, 2023.

Regarding adherence to the recommended time for taking the pill as per manufacturer instructions, this practice was reported by 37 (68.5%) participants. The majority of participants reported using the contraceptive pill for a duration between 1 and 3 years (77.8%; table 03). Gynecological care was identified as the

primary source of information on contraceptive methods, accounting for 56.9% of responses, followed by advice from family or friends (36.2%). A notable 36.2% of participants indicated obtaining contraceptive information from non-medical professionals (table 03).

**Table 04.** Descriptive frequency data on knowledge regarding first sexual intercourse, STIs and effectiveness of contraceptive methods (n=54).

<b>Risk of pregnancy – First Sexual Intercourse</b>	Frequency	%
- Yes	41	70.7%
- No	13	22.4%
<b>Method used</b>		
- None	21	38.9%
- Only 1	26	48.1%
- More than 1	7	13.0%
<b>Knowledge about STI</b>	Frequency	%
- Yes	32	59.3%
- No	22	40.7%
<b>Pill protection for STIs</b>	Frequency	%
- Yes	7	13.0%
- No	47	87.0%
<b>Antibiotic and pill effectiveness</b>	Frequency	%
- Yes	33	56.9%
- No	21	38.9%

Source: The influence of contraceptive methods on birth: a study in the central western region of Paraná, Integrado University Center, 2023.

According to table 04, a significant majority (70.7%) of respondents demonstrated suitable knowledge regarding the risk of pregnancy during their first sexual intercourse. However, 13 individuals (22.4%) expressed disbelief in the possibility of becoming pregnant during this initial experience, - although this percentage is much lower compared to those aware of the risk, it remains noteworthy due to the potential implications of early or unintended pregnancy.

Regarding contraception methods, 33 participants (61.1%) reported using at least one type of contraception. The study found an average level of knowledge among participants regarding knowledge about STIs" and "the effect of antibiotics on the effectiveness of the pill". Concerning the interaction between antibiotics and OC, specific information was available to the majority (33 participants - 56.9%) (table 04).

**Table 5.** Chi-Square test ( $X^2$ ) of independence to determine the association between the use of contraceptives and the number of births ( $n=54$ ).

Contraceptive use	Number of births			$X^2$	P
	No	1	More than 1		
- Yes	0 (0%)	4 (19%)	17 (81%)	12.05*	0.002*
- No	14 (42.4%)*	4 (12.1%)	15 (31.5%)		

Note: \* Significant values for the Chi-Square ( $X^2$ ) test of independence ( $P<0.05$ ). P = Significance of the statistical test; \* = significant statistical difference.

The Chi-square test showed that the number of births for all those using contraceptives (100% - 21) had at least one birth, and among those who did not use it, a total of 19 had at least one birth and 14 (42.4%) no births (table 05).

The results of the Chi-Square test showed that the use of contraceptives is significantly associated with the number of births in the

studied group, that is, people who used contraceptives were more likely to have a greater number of births. On the other hand, non-use led to a non-pregnancy event in 14 (42.4%) participants who were not using any type of contraceptive. These data have an inverse relationship with the functionality of contraceptive methods.

**Table 6.** Chi-Square test ( $X^2$ ) of independence with determination of the odds ratio (OR) of contraceptive use associated with planning for children ( $n=54$ ).

Contraceptive use	Planning for children		$X^2$	OR	P
	No	Yes			
- Yes	0 (0%)	21 (100%)*	12.02*	1.73*	0.001*
- No	14 (42.4%)	19 (57.6%)			

Note: \*Significant values for the Chi-Square ( $X^2$ ) test of independence ( $P<0.05$ ). OR = Odds Ratio; P = Significance of the statistical test; \* = significant statistical difference.

Regarding planning for children, participants using contraceptives (21 - 100%) planned their children, while 14 (42.4%) of those who did not use any contraceptive method had children without planning. The results of the Chi-Square test for planning children showed that there is a significant association between the use of contraceptives and planning for children in the studied group. People who used contraceptives are more likely to plan their children when compared to those who did not use contraceptives, and this association is statistically significant.

The Chi-Square associations showed significant results concerning people who used contraceptives, as they avoided unplanned children much more and prevented unwanted pregnancies from occurring. Besides that, using contraceptive methods also had an impact on the number of births, reinforcing the idea of preventing pregnancy, and improved planning in

relation to the number of births. At first glance, the data analyzed seems to be nonsense, as people who use contraceptive methods had a greater number of births, but these were planned births. This data represents relevance from the point of view of the effectiveness of pregnancy planning, that is, the use of contraceptives helps in planning children. Finally, the number of contraceptive methods combined influenced the number of children. When two or more contraceptive methods were combined, the number of unplanned children was lower, down to level zero.

## DISCUSSION

In this study, we explored how understanding contraceptive methods correlates with birth rates. The findings underscore a clear link between the proper use of contraceptives and



the frequency of births, emphasizing their role in enabling effective family planning outcomes.

Autonomy in decision-making is essential for fertility control, which is enabled by family planning. This process encompasses a variety of initiatives and services, including counseling, health education, and access to modern contraceptive methods. Such measures aim to enable individuals to exercise their right to decide freely and responsibly about motherhood, including the timing and ideal number of children<sup>18</sup>.

Rates of unintended pregnancies are typically higher among economically disadvantaged women, those with lower levels of education, individuals with disabilities, and ethnic minorities. This reality reflects both historical injustices and contemporary societal inequalities<sup>18</sup>. Rates and incidence of unplanned pregnancy vary widely among countries<sup>19</sup>. Women's level of education, participation in the workforce, and access to contraceptive methods can also influence their freedom of choice, affecting factors such as the type of childbirth and seeking specialized medical care. Women with higher levels of education tend to have more knowledge of contraceptive methods and better access to them. Epidemiological data on contraceptive use in different populations can provide context for understanding the patterns observed in the current work<sup>21</sup>.

If all women used contraceptive methods properly, rates of unintended pregnancies and maternal mortality would decrease by approximately 70% and 67% per year, respectively. Furthermore, evidence suggests that babies born less than two years apart have a higher likelihood of mortality in the first year of life compared to those born after this interval, underscoring the significance of pregnancy planning<sup>14</sup>.

However, even when used correctly and consistently, every modern contraceptive method has a failure rate (traditional methods are even less reliable). This reveals that unplanned pregnancy cannot be eliminated with currently available contraceptive methods. Moreover, as evidenced by data from the Centers for Disease Control and Prevention<sup>12</sup>, there is an even higher incidence of method failure when considering contraceptive use in real-world situations –

reaching up to a failure rate of 21% in the case of female condoms<sup>22</sup>.

Access to sexual health education is crucial for individuals to make informed decisions about their reproductive lives. Evidence shows that access to comprehensive sexuality education, which not only provides information but also builds communication skills, is associated with positive health outcomes<sup>12</sup>.

To ensure the effectiveness of OC, several measures are essential, including starting use on appropriate days and taking them at the same time daily<sup>10</sup>. The time using the pill also predicts adherence, suggesting that women who use the pill for an extended timeframe are more likely to adhere to regular use and the habit of taking it at the same time every day. This association needs further investigation to determine whether the behavior results from an established routine or has become an automatic habit, which is associated with better adherence to OC use<sup>23</sup>.

The effectiveness of OC is ensured when used correctly, a factor entirely dependent on the woman's self-control<sup>24</sup>. Individuals with greater knowledge about contraceptives tend to have a more positive attitude towards the pill and the information provided by their gynecologists<sup>25</sup>. The choice of contraceptive method considers the patient's preference; however, this choice should always be evaluated by a physician, preferably, as there may be clinical characteristics of the patient that contraindicate its use. It is the physician's responsibility to present all other methods to the patient so that the best option can be chosen<sup>26</sup>.

Healthcare professionals' guidance is beyond medication prescriptions, especially concerning sexuality, as lack of information and guidance on sexual and reproductive health, added to myths and taboos, may offer risks such as exposure to pathogens and unintended pregnancy. The latter can occur through unprotected sexual intercourse, without the use of protective methods such as male or female condoms<sup>27</sup>.

Under Law 9.263/96, the Ministry of Health mandates healthcare professionals to assist with conception and contraception as part of family planning, informing individuals about available method options. Inadequate knowledge about contraceptive methods is a factor that can lead to resistance to adherence<sup>28</sup>.

Factors such as low schooling, lack of knowledge about contraceptive methods, having several sexual partners, unprotected sex, and unsafe abortions are among the most common reasons for teenage pregnancy, associated with early initiation of sexual intercourse<sup>29</sup>. In addition to these factors, exacerbating factors include a lack of confidence in contraceptive methods and a lack of maturity to understand that unprotected sexual intercourse can result in pregnancy<sup>30</sup>.

We observed that 14 women (42.4%) who were not using contraceptives reported at least one unplanned pregnancy in their lifetime. While this is a significant number as an undesired outcome, it falls below the national average (62%) and is closer to the average in the American population (35.7%)<sup>2,31</sup>.

The Chi-square test revealed that contraceptive use among the participants supported the decision-making process regarding having children and determining the optimal timing for them. Achieving the desired number of children and spacing pregnancies can be facilitated through family planning, which can be achieved with the use of contraceptive methods<sup>32</sup>.

Family planning or reproductive planning consists of a set of interventions that help regulate fertility to decide whether to have children at the appropriate time or choose not to have them, ensuring the availability of all contraceptive methods and techniques that do not jeopardize people's lives and health, while guaranteeing freedom of choice<sup>33</sup>.

Research on contraception and pregnancy planning among adolescents aged 13-19 identified that the fact of an adolescent not being married or not having a partner is associated with a higher incidence of unplanned pregnancy<sup>34</sup>. In our study, 53.7% of participants were married, which may explain the Chi-square results indicating they avoided unplanned pregnancies.

These findings contrast with results from other studies<sup>35,36</sup> and can be justified by the profile of the municipality where the study was conducted, which diverges from other municipalities in the state and particularly at the national level, with a per capita Gross Domestic Product (GDP) of R\$ 53,562.73 – compared to other municipalities in the state, ranking 84<sup>th</sup> out of 399 and nationally, it ranks 819<sup>th</sup> out of 5,570<sup>37</sup>.

Another notable point is the Basic Education Development Index (BEDI), which for the early years of elementary education in public schools is 5.7, while for the later years, it is 5.8. Compared to other municipalities in the state, they respectively rank 264<sup>th</sup> and 21<sup>st</sup> out of 399. On a national scale, they rank 2,234<sup>th</sup> and 193<sup>rd</sup> out of 5,570 municipalities<sup>37</sup>.

In Brazil, family planning is still not a reality for most women. Women who are more likely to engage in family planning are typically older, employed, and have a longer interval between menarche and first sexual intercourse. Additionally, the first sexual intercourse before the age of 16 is directly associated with unplanned pregnancy<sup>36</sup>.

In a study on contraceptive use across 73 low and middle-income countries, it was found that the prevalence of contraceptive use was lower among married individuals aged 15-19 years without children compared to those who were married and had at least one child, or sexually active individuals who were not married. This indicates that the majority of those who wished to avoid pregnancy were not using contraceptive methods<sup>35</sup>.

Another study on contraceptive use across 36 developing countries found that up to 80% of unintended pregnancies occurred in women who did not use any contraceptive method in the previous five years, and more than half of these women were not using any contraceptive method at all. The use of modern long-acting contraceptive methods remained consistently low across all studied countries. Among women who last used a traditional contraceptive method, 83.8% discontinued use due to method failure and 40.2% due to side effects<sup>38</sup>.

Regarding the effectiveness of OC, according to Souza (2005), "if combined with broad-spectrum antibiotics, they can decrease intestinal flora, reduce hepatic enterohepatic recirculation, and consequently, circulating hormone levels", a knowledge demonstrated by participants in our study. In a study involving 75 pharmacy students, 72 (96%) of them stated that they were aware that the combined use of hormonal contraceptives with antibiotics can decrease their effectiveness<sup>10,39</sup>.

Finally, it is important to highlight that choosing to use certain contraceptive methods does not decrease the importance of others, such as dual protection. Among the primary reasons for using these methods are sexually transmitted infections (STIs), for which the most used method is the condom. Condoms are widely distributed in health services such as UBS, Testing and Counseling Centers (CTA), and are readily available for sale in pharmacies<sup>40</sup>.

We observed that the distribution of participants based on marital status, occupation, family income, and education level may have influenced reproductive behavior patterns. The high percentage of married women with above-average national income may influence their decisions regarding family planning, including access to financial resources and information about reproductive health.

Although a significant percentage of women intended to avoid pregnancy, many did not report effective contraceptive use. This may reflect barriers in accessing contraceptive methods, lack of knowledge about their effectiveness, or concerns regarding side effects.

Despite most participants receiving information about contraceptive methods during gynecological visits, a significant percentage of women obtained guidance from family members or friends. This suggests gaps in communication between healthcare professionals and patients. Regarding adequate knowledge of contraceptive methods, there is a lack of understanding about their effectiveness in preventing STIs, highlighting the need for continuous education on reproductive health and the importance of STI prevention.

Our findings imply a significant association between contraceptive use and family planning, as well as the number of childbirths. This suggests that correct contraceptive use is related to better outcomes in terms of family planning and a decrease in unintended pregnancies. By analyzing these findings and relating them to the field of family planning and reproductive health, we highlight the relevance of reproductive health education, equitable access to effective contraceptive methods, and the role of healthcare professionals in promoting healthy reproductive behaviors. Furthermore, the results underscore the need for personalized approaches

to family planning, considering the sociodemographic context and individual needs of women.

This study highlights the need for the healthcare system to support and guide the use of appropriate contraceptive methods for each woman, aiming to reduce failures and identify early situations where women may lack confidence or knowledge about the method they are using.

In the 1980s, lack of knowledge about contraceptives was the most common reason for non-use, but now it is the least mentioned reason. Currently, larger proportions of women list side effects and infrequent sexual activity as reasons for not using contraceptives. Additionally, access to contraceptives has improved over time, being cited less frequently as a reason for non-use. These studies demonstrate that progress can and has been achieved through effective family planning programs<sup>41</sup>.

As implications, we can mention social and cultural dimensions. For example, openly discussing issues related to sexuality and contraception is still taboo, exacerbating the lack of access to contraceptive information and services. This results in women making contraceptive choices that are not aligned with their reproductive health and well-being.

Gender inequalities play an important role in access to contraceptive methods and family planning. In many societies, women face barriers to accessing reproductive health due to power imbalances. This can include a lack of autonomy in making reproductive decisions, pressure to have children or lack of access to accurate information about contraception. Therefore, gender-sensitive approaches are essential to ensure that women have control over their reproductive health and can make informed choices about contraception and family planning. It is essential to ensure equitable access to reproductive health services<sup>22</sup>. Addressing the underlying social, economic, and political determinants that shape these patterns globally in family planning studies is crucial for understanding and improving the current landscape.

As social determinants that impact decisions regarding contraception and family planning include education, employment, marital

status, and access to information. Economic determinants encompass income, access to healthcare services, and the cost of contraceptive methods. Political determinants involve public health policies, funding for reproductive health services, and sexual education programs. Policies promoting equitable access to contraceptive methods and reproductive health services can have a significant impact on reducing reproductive health inequalities.

The Covid-19 pandemic, added to other environmental crises, has made universal social protection programs more essential than ever, highlighting that many women lack social protection even where programs exist<sup>22</sup>. One option to mitigate the current harms added to existing issues would be to include the participation of other divisions such as community leaders, who can better identify local barriers.

By incorporating these different perspectives, the debate becomes more inclusive and informed, aiding in identifying more holistic and sensitive solutions to the challenges of access to contraceptive methods and family planning. This also promotes a more empathetic and human-centered approach to addressing reproductive health issues.

It is worth noting that for the execution of this research, the researchers were carefully trained in approaching the sensitive research topic. A topic is considered sensitive when it generates controversy, raises questions about needs, or places universal values under tension<sup>42</sup>. In this case, the approach to individuals to respond to the questionnaire emphasized privacy, confidentiality, and clarification of the study's purpose. Therefore, rigorous measures were adopted, with a commitment to protecting the rights and well-being of participants, including language sensitivity and respect, especially since the research involved a male researcher.

## CONCLUSION

The study highlights a strong association between the proper use of contraceptives and family planning, emphasizing the importance of equitable access to effective contraceptive methods. This association underscores the need

for public health policies that promote universal access to these methods, considering the socioeconomic disparities that influence women's reproductive decisions.

It also emphasizes the role of healthcare professionals in reproductive health education, the effectiveness of contraceptive methods, and the prevention of STIs, ensuring that women have control over their reproductive health. This highlights the need for sexual education programs that address contraceptive methods, gender, autonomy, and reproductive rights. The role of the medical professional in prescribing appropriate medications to patients and discussing topics such as sexuality, sexual and reproductive health, STIs, and myths is also underscored.

In clinical practice, it is recommended to train healthcare professionals in contraception and to create awareness campaigns on reproductive health. These actions are essential to increase knowledge about contraceptive methods, promote informed choices, and reduce rates of unintended pregnancy and associated complications. Furthermore, the interdisciplinary collaboration among sectors such as health, education, and government is emphasized to implement the proposed recommendations. This approach can bring more comprehensive and sustainable solutions to reproductive health challenges, ensuring accessibility to contraceptive methods for all individuals, regardless of their income, geographic location, or social status.

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