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TRABALHOS DE PESQUISA

KNOWLEDGE-PRACTICE DISCREPANCY: A CROSS-SECTIONAL ANALYSIS OF INCONSISTENT CONDOM USE AND SEXUAL RISK BEHAVIORS AMONG UNIVERSITY STUDENTS IN THE NON-METROPOLITAN OF MINAS GERAIS, BRAZIL

DESCOMPASSO ENTRE CONHECIMENTO E PRÁTICA: UMA ANÁLISE TRANSVERSAL DO USO INCONSISTENTE DE PRESERVATIVOS E COMPORTAMENTOS DE RISCO SEXUAL ENTRE UNIVERSITÁRIOS DO INTERIOR DE MINAS GERAIS, BRASIL

DISCREPANCIA ENTRE CONOCIMIENTO Y PRÁCTICA: UN ANÁLISIS TRANSVERSAL DEL USO INCONSISTENTE DE PRESERVATIVOS Y LOS COMPORTAMIENTOS SEXUALES DE RIESGO ENTRE ESTUDIANTES UNIVERSITARIOS DEL INTERIOR DE MINAS GERAIS, BRASIL

Natália Generoso Figueiredo [1] *Vitória Teixeira Melillo*[1] *Victória Mirella Neves Rodrigues*[1] *Juliana Dias Augusta*[2] *Kinulpe Honorato-Sampaio*[3]

Abstract: This cross-sectional study aimed to assess the history of sexually transmitted infections (STIs), knowledge about contraceptive methods, and adherence to condom use among university students at a university in Brazil, Diamantina-MG, Brazil. Data from 298 undergraduate students (aged ≥18 years) were collected online between July and December 2023. The prevalence of self-reported STI history was 8%. Although the male condom was the most commonly reported contraceptive method (92%), its use was inconsistent: only 50% of the participants reported using it in all sexual encounters, and only 9% reported its use during oral sex. Risk behaviors were frequent, such as coitus interruptus (60%) and use of emergency contraception (30%). Media and the internet (90%) were the main sources of information. Students from health-related fields showed a lower prevalence of STIs (4.5% vs. 11.8%; p=0.023). Sexual initiation before the age of 18 was associated with a higher risk behaviors. It was possible to conclude that there is a critical gap between reported contraceptive knowledge and actual preventive practices, highlighting the urgent need for institutional educational strategies that promote health literacy and commitment to safe sex among this population.

Keywords: Sexual Behavior; Sexually Transmitted Infections; Condom; Contraception; University Students.

Resumo: Este estudo transversal objetivou avaliar o histórico de infecções sexualmente transmissíveis (ISTs), o conhecimento sobre métodos contraceptivos e a adesão ao uso de preservativos entre estudantes de uma Universidade Federal localizada no interior de Minas Gerais. Foram analisados dados de 298 estudantes de graduação (idade ≥18 anos), coletados *on-line,* entre julho e dezembro de 2023. A prevalência de histórico de ISTs foi de 8%. Embora o preservativo masculino tenha sido o método mais reportado (92%), seu uso foi inconsistente: apenas 50% dos participantes o utilizavam em todas as relações, e apenas 9% no sexo oral. Comportamentos de risco foram frequentes, como coito interrompido (60%) e uso da pílula do dia seguinte (30%). A mídia/internet (90%) foi a principal fonte de informação. Estudantes da área da saúde tiveram menor prevalência de ISTs (4,5% vs. 11,8%; p=0,023). A iniciação sexual antes dos 18 anos associou-se a mais comportamentos de risco. Conclui-se que há uma lacuna crítica entre o conhecimento contraceptivo declarado e a prática preventiva, indicando a urgência de estratégias educacionais institucionais que promovam a literacia em saúde e o compromisso com o sexo seguro nesta população.

Palavras-chave: Comportamento Sexual; Infecções Sexualmente Transmissíveis; Camisinha; Anticoncepção; Universitários.

Resumen: El objetivo de este estudio transversal fue evaluar los antecedentes de infecciones de transmisión sexual (ITS), el conocimiento sobre métodos anticonceptivos y la adherencia al uso de preservativos entre estudiantes de una Universidad Federal ubicada en el interior de Minas Gerais. Se analizaron datos de 298 estudiantes de pregrado (edad ≥18 años), recolectados en línea entre julio y diciembre de 2023. La prevalencia de antecedentes de ITS fue del 8%. Aunque el preservativo masculino fue el método más mencionado (92%), su uso resultó inconsistente: solo el 50% de los participantes lo utilizaba en todas las relaciones sexuales, y apenas el 9% en el sexo oral. Los comportamientos de riesgo fueron frecuentes, como el coito interrumpido (60%) y el uso de la píldora del día siguiente (30%). Los medios de comunicación/internet (90%) fueron la

[1]Médica, Universidade Federal dos Vales dos Jequitinhonha e Mucuri, Faculdade de Medicina, Diamantina, MG, Brasil. natalia.generoso@ufvjm.edu.br; vitoria.melillo@ufvjm.edu.br; victoria.neves@ufvjm.edu.br
[2]Doutora em Ciências da Saúde, Universidade Federal dos Vales dos Jequitinhonha e Mucuri, Faculdade de Medicina, Diamantina, MG, Brasil. dias.juliana@ufvjm.edu.br
[3]Doutor em Fisiologia e Farmacologia, Universidade Federal dos Vales dos Jequitinhonha e Mucuri, Faculdade de Medicina, Diamantina, MG, Brasil. kinulpe@ufvjm.edu.br

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principal fuente de información. Los estudiantes del área de la salud presentaron menor prevalencia de ITS (4,5% frente a 11,8%; p=0,023). La iniciación sexual antes de los 18 años se asoció con mayor cantidad de comportamientos de riesgo. Se concluye que existe una brecha crítica entre el conocimiento anticonceptivo declarado y la práctica preventiva, lo que indica la urgencia de estrategias educativas institucionales que promuevan la alfabetización en salud y el compromiso con el sexo seguro en esta población.

Palabras clave: Comportamiento Sexual; Infecciones de Transmisión Sexual; Preservativo; Anticoncepción; Estudiantes Universitarios.

Introduction

Sexual and reproductive health is a fundamental pillar of public health, with direct implications for quality of life, well-being, and social development. Among young adults, particularly university students, decisions related to sexuality are especially important, as this stage of life is characterized by greater autonomy, new social interactions, and behaviors that may influence health outcomes in both the short and long term (Bersamin et al., 2017). In this context, adequate knowledge and appropriate use of contraceptive methods are essential not only for preventing unintended pregnancies but also for reducing the transmission of sexually transmitted infections (STIs).

STIs remain a major global public health challenge, particularly among young people (Szwarcwald et al., 2022). National epidemiological data indicate that between 2007 and 2024, more than 541,759 cases of HIV infection were reported in Brazil, with individuals aged 15 to 24 years accounting for 23.2% of all reported cases. In 2023 alone, 46,495 new HIV infections were reported, of which 23.4% occurred among individuals aged 15–24 years (Brasil, 2024). Similarly, syphilis continues to exhibit alarmingly high incidence rates in this age group, reflecting persistent risk behaviors and inconsistent adoption of preventive measures (Westin et al., 2023).

Despite advances in sexual health policies and the widespread availability of information through the internet, consistent condom use remains suboptimal among university students (Santos; Ferreira; Ferreira, 2024). Factors such as trust in a sexual partner, low perceived risk of infection, and the unavailability of condoms at the time of intercourse are commonly associated with inconsistent condom use (Ajayi; Ismail; Akpan, 2019). Furthermore, behaviors such as having multiple sexual partners, practicing withdrawal (coitus interruptus), and alcohol and drug use further increase the vulnerability of this population (Ssekamatte et al., 2020).

In Brazil, although several studies have investigated sexual health in large urban centers, research focusing on rural and non-metropolitan areas settings remains scarce, despite the distinct sociocultural characteristics and differences in access to specialized healthcare services in these regions. The Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), located in Diamantina, Minas Gerais, provides a particularly relevant setting for this investigation because it attracts students from different regions of the country, many of whom come from areas with limited access to sexual and reproductive healthcare resources (Arruda; Maia; Alves, 2018). Understanding the factors that influence sexual behavior in this context is essential for developing culturally appropriate educational strategies and public health policies.

Therefore, the present study aimed to assess the history of sexually transmitted infections, knowledge of contraceptive methods, and adherence to condom use among undergraduate students at UFVJM, thereby contributing to the promotion of sexual and reproductive health in an inland university setting that remains underrepresented in the Brazilian scientific literature.

Methods

This was a cross-sectional, observational, and descriptive study approved by the Research Ethics Committee of the Federal University of the Jequitinhonha and Mucuri Valleys (CEP/UFVJM) under approval number 5,707,041. UFVJM, located in Diamantina, Minas Gerais, was selected because it represents an important setting for investigating the sexual health of young adults living in an inland region characterized by unique sociocultural features and limited access to specialized healthcare services, a

context that remains underexplored in Brazilian research.

Study Population and Sample

The target population consisted of undergraduate students enrolled at the Diamantina campus of UFVJM who were aged 18 years or older. Participants were recruited through social media platforms and institutional email communications. Using a convenience sampling strategy, we included all students who voluntarily agreed to participate and provided electronic informed consent. The inclusion criteria were undergraduate students regularly enrolled at the university, aged ≥18 years, who agreed to participate. The exclusion criteria comprised incomplete questionnaires, failure to provide informed consent, and temporary withdrawal from academic activities.

Sample size was calculated using G*Power version 3.1.9.7 based on a chi-square goodness-of-fit test for contingency tables. The following parameters were adopted: effect size (w) = 0.30 (moderate), significance level (α) = 0.05, statistical power ($1 - \beta$) = 0.95, and one degree of freedom. Under these assumptions, the model estimated a noncentrality parameter (λ) of 13.05 and a critical χ^2 value of 3.84, resulting in a minimum required sample size of 145 participants to ensure adequate statistical power. The analysis also yielded an achieved power of 0.9508, confirming that the estimated sample size was sufficient to detect moderate effect sizes in the study context.

Data Collection Instrument

Data were collected between July and December 2023 using a self-administered online questionnaire hosted on the Google Forms® platform. The questionnaire was adapted from the Women's Questionnaire of the Brazilian National Survey on Demography and the Health of Women and Children (PNDS-2006) and modified to suit the university student population. The average completion time ranged from 5 to 10 minutes. To ensure participant confidentiality, no personally identifiable information was collected, and institutional email authentication restricted each participant to a single response.

Variables

Sociodemographic information was collected, including age, biological sex, gender identity, sexual orientation, and academic field of study. Variables related to sexual and reproductive health included:

- History of STIs: self-reported lifetime diagnosis of sexually transmitted infections;
- Sexual education: primary sources of sexual health information (family, friends, school, healthcare services, and media);
- Sexual history: age at sexual debut;
- Risk behaviors: multiple sexual partners, unprotected sexual intercourse, and withdrawal (coitus interruptus);
- Contraceptive methods: use of male condoms, hormonal contraceptives, intrauterine devices (IUDs), fertility awareness-based methods (calendar method), withdrawal, and emergency contraception;
- Condom use: frequency of condom use during vaginal, anal, and oral sexual intercourse.

For analytical purposes, the following variables were categorized:

- academic field of study (health sciences vs. non-health sciences);
- age at sexual debut (<18 years vs. ≥18 years).

Statistical Analysis

Data were entered into Microsoft Excel® and analyzed using Jamovi® software (version 2.3.28). Descriptive statistics, including absolute and relative frequencies, were calculated. Associations between STI history, risk behaviors, and the independent variables (academic field of study, age at sexual

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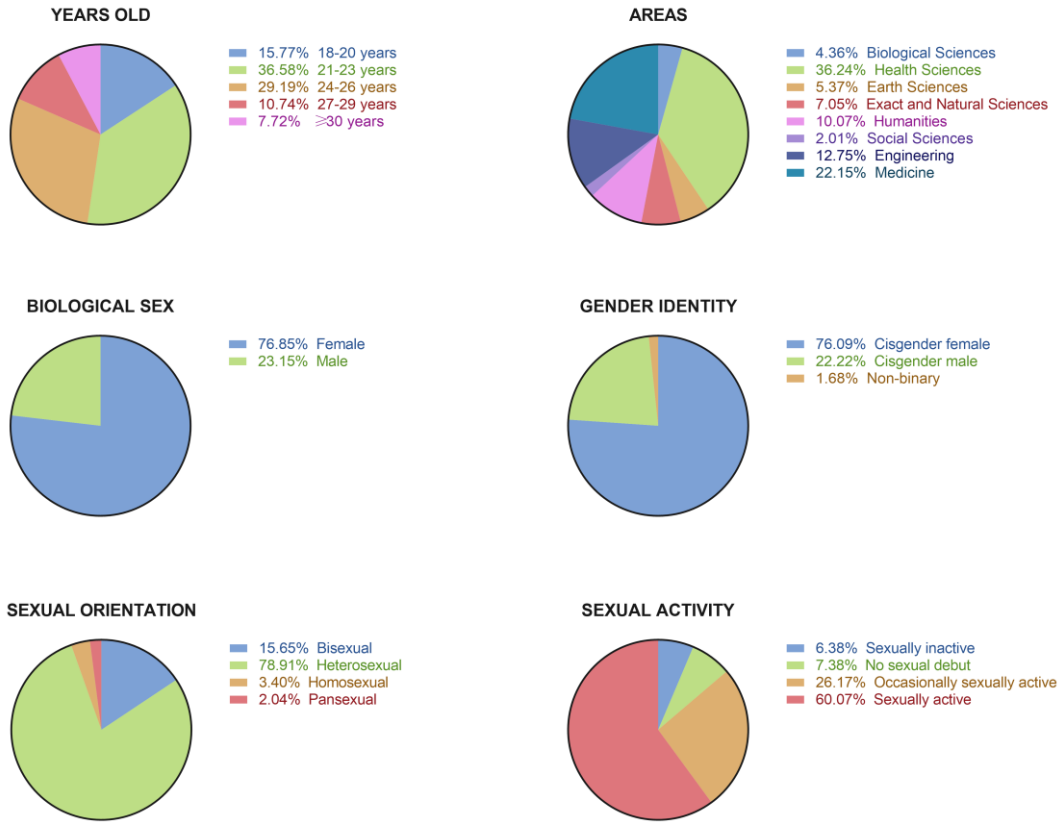
debut, and biological sex) were assessed using Pearson's chi-square (χ^2) test or Fisher's exact test, when appropriate. Statistical significance was established at $p < 0.05$. Missing or inconsistent responses were excluded from the analyses.

Results

A total of 298 students completed the questionnaire, corresponding to a response rate of approximately 6.1% of the 4,860 students enrolled at the institution during the study period. As shown in Figure 1, the participants were predominantly young adults aged 18–29 years, female, cisgender, heterosexual, enrolled in health sciences programs, sexually active, and reported having some prior knowledge of contraceptive methods.

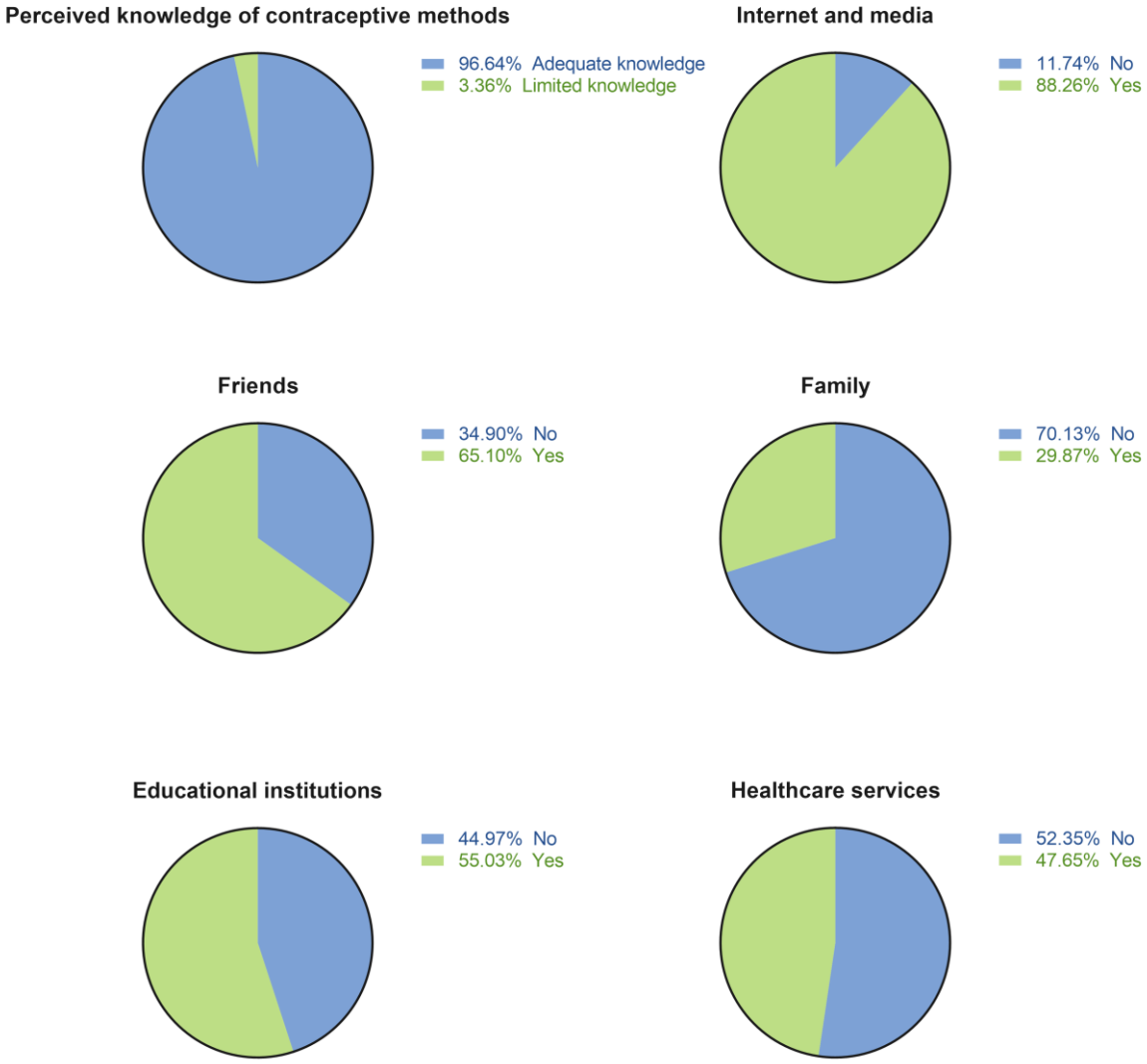
Figure 1 - Sociodemographic profile of students from the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM) who participated in the study.



Source: Prepared by the authors based on the study data.

The most frequently reported sources of information on sexual health were the media and the internet (90%), followed by friends (65%), educational institutions (55%), healthcare services (47%), and family members (30%). Only 3.3% of participants reported feeling poorly informed about the topic (Figure 2).

Figure 2 - Sources of information on contraceptive methods among students from the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), Minas Gerais, Brazil.



Source: Prepared by the authors based on the study data.

Male condoms were the most commonly used contraceptive method (92%). Hormonal contraceptives were reported by 72% of participants, while approximately 60% reported using withdrawal (coitus interruptus). Nearly 30% indicated having used emergency contraception during the previous year. Intrauterine devices (IUDs) (21%) and fertility awareness-based methods (calendar method) (24%) were the least frequently reported contraceptive methods (Figure 3).

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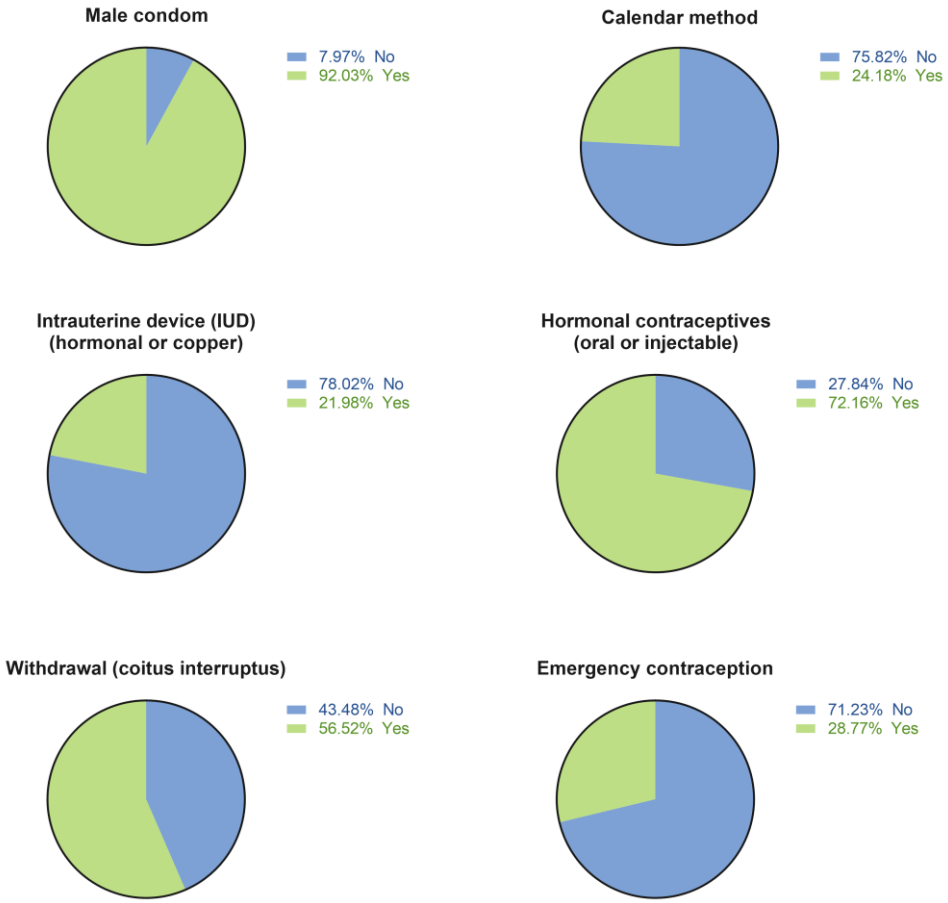
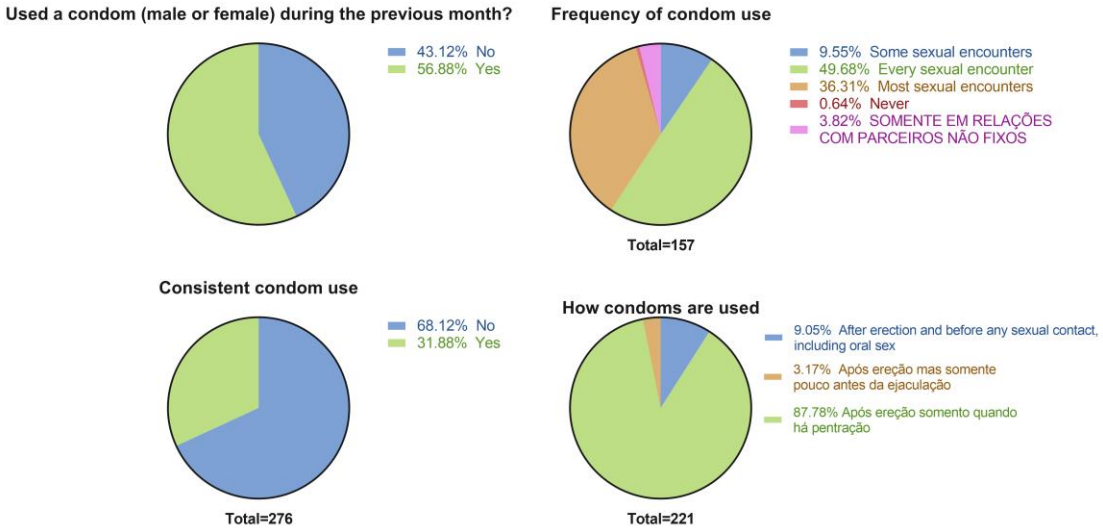
Figure 3 - Contraceptive method use among students from the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), Minas Gerais, Brazil.



Source: Prepared by the authors based on the study data.

Overall, 8% of participants reported a previous diagnosis of an STI. Regarding condom use, 43% reported not using condoms during the previous month, only half reported consistent condom use during every sexual encounter, and only 9% reported using condoms during oral sex (Figure 4).

Figure 4 - Condom use among students from the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), Minas Gerais, Brazil.



Source: Prepared by the authors based on the study data.

When comparing students enrolled in health sciences programs with those from other academic fields, health sciences students showed a significantly lower prevalence of STIs ($\chi^2(1) = 5.140$, $p = 0.023$; Cramer's V = 0.136) and a higher perceived level of knowledge regarding contraception ($\chi^2(1) = 6.276$, $p = 0.019$; Cramer's V = 0.145) (Table 1). However, no significant differences were observed in risk behaviors, including having multiple sexual partners, engaging in unprotected sexual intercourse, or practicing withdrawal.

Table 1 - History of sexually transmitted infections (STIs) and sexual risk behaviors among students from the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), Minas Gerais, Brazil, stratified by academic field (health sciences vs. non-health sciences).

Health sciences students	**History of STIs**		***p* value**
	No	**Yes**	
No	105 (88.2%)	14 (11.8%)	0.023 (χ^2)
Yes	150 (95.5%)	7 (4.5%)	
	Knowledge of condom use and contraceptive methods		
	Adequate knowledge	**Limited knowledge**	
No	116 (93.5%)	8 (6.5%)	0.019 (Fisher's)
Yes	172 (98.9%)	2 (1.1%)	
	Number of sexual partners		
	Multiple sexual partners	**Single sexual partner**	
No	26 (23.2%)	86 (76.8%)	0.238 (χ^2)
Yes	26 (17.3%)	124 (82.7%)	
	Withdrawal (coitus interruptus)		
	No	**Yes**	
No	59 (49.6%)	60 (50.4%)	0.075 (χ^2)
Yes	61 (38.9%)	96 (61.1%)	
	Consistent condom use		
	No	**Yes**	
No	81 (68.1%)	38 (31.9%)	0.98 (χ^2)
Yes	107 (68.2%)	50 (31.8%)	

Source: Prepared by the authors based on the study data.

The association between age at sexual debut (before vs. after 18 years of age) and risk behaviors was also examined. Although no significant difference was observed in the prevalence of self-reported STI history ($\chi^2(1) = 1.949$, $p = 0.163$; Cramer's V = 0.084), participants who initiated sexual activity before the age of 18 years exhibited a significantly higher prevalence of risk behaviors, including having multiple sexual partners ($\chi^2(1) = 4.286$, $p = 0.038$; Cramer's V = 0.128), practicing withdrawal ($\chi^2(1) = 7.581$, $p = 0.006$; Cramer's V = 0.166), and reporting lower rates of consistent condom use during all sexual encounters ($\chi^2(1) = 5.656$, $p = 0.017$; Cramer's V = 0.144) (Table 2).

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Table 2 - History of sexually transmitted infections (STIs) and sexual risk behaviors among students from the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), Minas Gerais, Brazil, stratified by age at sexual debut (<18 years vs. ≥18 years).

Sexual debut	History of STIs		*p* value
	No	**Yes**	
< 18 years	141 (90.4%)	15 (9.6%)	0.163 (χ^2)
≥ 18 years	112 (94.9%)	6 (5.1%)	
	Number of sexual partners		
	Multiple sexual partners	**Single sexual partner**	
< 18 years	36 (24.3%)	112 (75.7%)	0.038 (χ^2)
≥ 18 years	16 (14.0%)	98 (86.0%)	
	Withdrawal (coitus interruptus)		
	No	**Yes**	
< 18 years	56 (35.9%)	100 (64.1%)	0.006 (χ^2)
≥ 18 years	62 (52.5%)	56 (47.5%)	
	Consistent condom use		
	No	**Yes**	
< 18 years	115 (73.7%)	41 (26.3 %)	0.017 (χ^2)
≥ 18 years	71 (60.2%)	47 (39.8%)	

Source: Prepared by the authors based on the study data.

Analysis by biological sex revealed a significant difference in the number of sexual partners, with males reporting multiple sexual partners more frequently than females (Table 3). No significant sex-related differences were observed regarding STI history, withdrawal practices, or condom use.

Table 3 - History of sexually transmitted infections (STIs) and sexual risk behaviors among university students, stratified by biological sex.

Biological sex	History of STIs		*p* value
	No	**Yes**	
Female	195 (92.9%)	15 (7.1%)	0.603 (χ^2)
Male	60 (90.9%)	6 (9.1%)	
	Number of sexual partners		
	Multiple sexual partners	**Single sexual partner**	
Female	33 (16.5%)	167 (83.5%)	0.015 (χ^2)
Male	19 (30.6%)	43 (69.4%)	
	Withdrawal (coitus interruptus)		
	No	**Yes**	
Female	96 (44.8%)	116 (55.2%)	0.443 (χ^2)
Male	26 (39.4%)	40 (60.6%)	
	Consistent condom use		
	No	**Yes**	

Female	143 (68.1%)	67 (31.9%)	0.989 (χ^2)
Male	45 (68.2%)	21 (31.8%)	

Source: Prepared by the authors based on the study data.

Discussion

This cross-sectional study investigated the history of STIs, knowledge of contraceptive methods, and preventive behaviors among university students at an institution located in the inland region of Minas Gerais, Brazil. The findings reveal a striking paradox: although most participants reported using male condoms as their primary contraceptive method (92%) and considered themselves well informed about contraception, a substantial gap persists between self-reported knowledge and effective preventive practices. This discrepancy is reflected in the high prevalence of ineffective contraceptive methods and the low rate of consistent condom use.

The 8% prevalence of self-reported STI history observed in the present study is consistent with findings from another investigation involving university students, which reported a prevalence of 6% (Cogo et al., 2023). These findings reinforce the vulnerability of university students to STIs, even in inland settings. Stratification by academic field revealed that students enrolled in health sciences programs had a lower prevalence of STIs (4.5% vs. 11.8%) and reported greater perceived knowledge of contraception than students from other disciplines. Although previous research has shown that knowledge about STIs remains insufficient among university students, including those enrolled in health sciences programs (Scotini et al., 2025), our findings suggest that exposure to technical knowledge during undergraduate education may exert a protective effect by improving risk perception. Nevertheless, the absence of significant differences in specific risk behaviors, such as having multiple sexual partners or inconsistent condom use, indicates that factual knowledge alone is insufficient to promote behavioral change, which is likely influenced by more complex psychosocial and contextual factors (Muanda et al., 2017).

The predominance of the media and the internet (90%), followed by friends (65%), as the primary sources of information about contraceptive methods corroborates previous findings (Alhussaini et al., 2025; Vamos et al., 2020) and highlights the limitations of formal sexual education. These studies suggest that the internet is frequently used as a source of sexual health information because it provides privacy and easy access to information. In addition, young adults often rely on peers to clarify doubts and share personal experiences. The finding that 45% of participants reported never having received institutional guidance on sexual health is particularly concerning, given that comprehensive sexual education is essential for effective prevention (Alhussaini et al., 2025). Reliance on informal sources may perpetuate misconceptions, including common myths regarding emergency contraception (Byamugisha et al., 2006), and contribute to a false sense of security. Family also plays a crucial role, exerting either positive or negative influences on young people's attitudes and reproductive health outcomes (Vamos et al., 2020).

The high prevalence of withdrawal (coitus interruptus), reported by approximately 60% of participants, together with the use of emergency contraception during the previous year (approximately 30%), indicates reliance on high-risk contraceptive practices. Because these methods provide no protection against STIs, they are often adopted in situations of inadequate preparation or limited access to more effective contraceptive options.

The most concerning finding was the inconsistent use of condoms: only half of the participants reported using condoms consistently during every sexual encounter, and only 9% reported condom use during oral sex. This pattern of inconsistent condom use represents one of the major risk factors for STI acquisition. Numerous recent studies have demonstrated that consistent condom use among university students remains suboptimal across different countries and settings (Bomfim et al., 2021). Irregular condom use has been reported with both steady and casual partners (Ramos et al., 2020). A Brazilian study involving nearly 2,000 university students found that only 39.4% reported consistent condom use (Santos; Ferreira; Ferreira, 2024). Similarly, only 38.6% of sexually active university students in Nigeria reported consistent condom use during the previous year (Ajayi; Ismail; Akpan, 2019). Among Chinese

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university students who reported casual sexual intercourse, only 37.6% consistently used condoms (Chen et al., 2023). In Uganda, just over half (53.7%) of university students reported condom use during sexual intercourse within the previous six months (Otim et al., 2024). Studies conducted in Spain and South Africa likewise indicate that more than half of university students fail to use condoms correctly and consistently (Haffejee; Koorbanally; Corona, 2018; Ruiz-Palomino et al., 2020). Factors such as trust in a sexual partner, low perceived susceptibility to STIs, and the belief that condoms reduce sexual pleasure have consistently been identified as barriers to condom use (Knauth; Barcelos, 2024) and likely explain the patterns observed in the present study.

Analysis according to age at sexual debut (<18 vs. ≥18 years) showed that early sexual initiation was significantly associated with a higher prevalence of risk behaviors during young adulthood, including having multiple sexual partners, practicing withdrawal, and inconsistent condom use. This association has been consistently documented in previous studies, suggesting that earlier sexual initiation may be associated with lower maturity in risk assessment and decision-making (Trieu; Bratton; Hopp Marshak, 2011; Waggoner; Lanzi; Klerman, 2012). Furthermore, the decline in condom use within stable relationships, also observed in the present study, may increase vulnerability to STIs when sexual exclusivity cannot be assured (Agnew et al., 2017). Thus, despite widespread awareness of the importance of condoms, adherence to consistent condom use remains low, exposing university students to both STIs and unintended pregnancies.

Stratified analysis by biological sex demonstrated that men reported multiple sexual partners more frequently than women, a finding consistent with previous studies describing gender-specific patterns of sexual behavior (Caetano et al., 2020; Araújo et al., 2025). In contrast, Ssekamatte et al. (2020) reported that women who used psychoactive substances were 29% more likely than men to engage in multiple sexual partnerships, often driven by socioeconomic vulnerability and transactional sex. Despite the higher prevalence of multiple partnerships among men in the present study, no significant sex-related differences were observed regarding STI history, withdrawal practices, or consistent condom use. These findings suggest that although men may be more frequently exposed to potentially risky situations through multiple partnerships, this behavior did not translate into greater vulnerability to STIs or lower adherence to condom use in our sample. One possible explanation is that condom use may occur selectively, particularly during casual sexual encounters, as previously reported (Ruiz-Palomino et al., 2020; Santos; Ferreira; Ferreira, 2024). Likewise, the absence of sex differences in withdrawal practices and emergency contraception use suggests that these behaviors are Similarly distributed between men and women, possibly reflecting shared decision-making during sexual intercourse. Collectively, these findings underscore the importance of educational interventions that address not only gender-specific issues but also the relational and contextual factors influencing sexual behavior.

When interpreted within the Brazilian context, the present findings offer several important contributions. The 8% prevalence of self-reported STI history falls between the 1.9% positivity rate reported in rapid testing campaigns conducted in the countryside of São Paulo State (Bomfim et al., 2021) and the 36.6% prevalence of self-reported infections during the previous 12 months reported among students at a federal university in Minas Gerais (Ferreira; Francisco; Loyola, 2023). This variability underscores the importance of context-specific investigations capable of capturing the sociocultural characteristics of distinct populations, particularly those living in inland regions with unique patterns of access to health information and healthcare services. Consistent with previous Brazilian studies, participants demonstrated high self-perceived knowledge regarding contraceptive methods despite inconsistent preventive practices. Only half of the participants reported condom use during every sexual encounter, corroborating Brazilian studies reporting rates of inconsistent condom use ranging from 45.6% to 62.54% (Ferreira; Francisco; Loyola, 2023; Ramos et al., 2020).

This discrepancy reinforces that knowledge alone is insufficient to promote safer sexual behaviors. Rather, behavioral choices are influenced by factors such as alcohol and drug use, multiple sexual partnerships, and the false sense of security frequently associated with stable relationships, which often leads to premature discontinuation of condom use (Knauth; Barcelos, 2024). It is particularly concerning that this vulnerability persists even among students enrolled in health sciences programs. Despite their formal education, these students may still exhibit important gaps in knowledge regarding STI

transmission and treatment, as well as high rates of unsafe sexual practices (Scotini et al., 2025). Furthermore, diminished risk perception—partly influenced by viewing HIV as a manageable chronic condition and by the inability to visually identify individuals living with HIV—may further contribute to reduced adherence to preventive measures (Knauth; Barcelos, 2024).

In this context, the present study extends the existing literature by (i) focusing on a university population from the inland region of Minas Gerais, a setting that remains underrepresented in the scientific literature; (ii) demonstrating that sexual risk behaviors persist even among a population with a high proportion of health sciences students; and (iii) emphasizing the need for interventions that address the cultural, relational, and gender-related dimensions shaping sexual decision-making, moving beyond the simple provision of information toward the promotion of health literacy as a key strategy for fostering informed, autonomous, and safer sexual health decisions.

Limitations

This study has several limitations that should be considered when interpreting its findings. Firstly, its cross-sectional design allows the identification of associations but precludes establishing causal relationships between the variables analyzed. secondly, the use of convenience sampling and recruitment exclusively through social media and institutional email may have introduced selection bias. Students with greater interest in sexual health or previous experiences related to the topic may have been more likely to participate, potentially leading to either overestimation or underestimation of certain behaviors and prevalence estimates compared with the overall university population. Although the response rate of 6.1% was sufficient to achieve the calculated minimum sample size, it reinforces this limitation and restricts the representativeness of the findings. Another important limitation is the reliance on self-reported data, which are inherently subject to recall and social desirability biases, particularly when addressing sensitive topics such as sexual behaviors and STI history. Finally, the specific sociocultural characteristics of the study population—students enrolled at a university located in the inland region of Minas Gerais—limit the generalizability of the findings to other regions of Brazil, highlighting the need for further studies conducted in diverse sociocultural settings.

Practical Implications

The present findings underscore the need for educational interventions that go beyond Yesply providing factual information. Strategies aimed at improving health literacy—defined as the ability to access, critically evaluate, communicate, and apply health information in everyday decision-making—are likely to be more effective than purely information-based approaches (Prémusz et al., 2025; Sons; Eckhardt, 2023). The implementation of interactive educational programs, the free and convenient availability of condoms on university campuses—a strategy with well-established effectiveness (Petrova; Garcia-Retamero, 2015)—and peer-led educational initiatives are essential for addressing social and behavioral norms in a culturally sensitive manner. Such interventions have the potential not only to increase knowledge but also to promote sustained behavioral commitment to sexual health (Akalin, 2022).

Conclusion

The analysis of sexual behavior and contraceptive use among UFVJM university students revealed that broad access to information does not necessarily translate into consistent preventive practices. The high prevalence of risky contraceptive practices, the low adherence to regular condom use—particularly during oral sex—and the non-negligible prevalence of STIs highlight a clear disconnection between self-reported knowledge and actual preventive behavior. Although students enrolled in health sciences programs demonstrated slightly more favorable indicators, this advantage was insufficient to eliminate the overall vulnerability observed across the study population. These findings emphasize the need for

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continuous institutional initiatives that extend beyond the Yesple dissemination of information by fostering critical reflection, practical skills, and supportive environments that encourage the adoption of protective behaviors. Ultimately, this study reinforces that integrated educational strategies tailored to the sociocultural characteristics of inland regions are essential for reducing sexual health risks, strengthening health literacy, and promoting a culture of responsible sexuality among university students.

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