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Condom use in last sexual intercourse among undergraduate students: how many are using them and who are they?

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Abstract *A cross-sectional study was conducted to measure the prevalence of condom use in the last sexual intercourse and associated factors among university students. Undergraduate students from a public university aged 18 and over of the Rio Grande (RS) campuses were eligible. A systematic single-stage sampling was used, based on class lists and self-administered questionnaire. Descriptive, bivariate and multivariable analyses were employed, with Poisson regression for the latter two. Most of the 1,215 university students included in the analysis were aged 20 to 29 (65.6%) and 69.3% began their sexual life before the age of 18. The prevalence of condom use in the last intercourse was 41.5% (95%CI: 38.7-44.3). Male gender, lower age group, condom use at first sexual intercourse, older age of onset of sexual activity, not having a partner and casual partner in the last sexual intercourse increased the likelihood of condom use.*

Key words *Condoms, Universities, Sexual health, Adult*

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Introduction

Issues such as transmission and infection from sexually transmitted diseases (STDs) and acquired immunodeficiency virus (HIV) are of concern when it comes to people sexual and reproductive health. The World Health Organization[1] estimates 500 million new cases of curable STDs each year. By 2013, the number of new HIV infections worldwide reached 2.1 million[2]. Global data indicate that around one third of the global burden of diseases in women of childbearing age is attributed to complications related to sexual and reproductive health[3].

In Brazil, the main preventive strategy of the National AIDS Coping Policy is the use of condoms, but a decreased trend in its use, especially among young people was noted, although they are the population segment with the highest proportion of use[4]. The university population consists mostly of young people with active sexual lives who are one of the groups vulnerable to negative outcomes for sexual and reproductive health[5].

Universities provide many adolescents, young people and adults with professional education while enabling the transition to a world still unknown and full of new experiences, including sexual experiences. Some university students migrate from other municipalities, live alone and adopt new behaviors. Although university students have a high level of education, knowledge about STD/AIDS and issues related to reproductive health is sometimes still incipient[6]. In addition, some of them are unaware of their serological status[7]. University students who do not perceive the risks to which they are exposed may neglect the importance of protective behaviors such as the use of condoms[8]. This makes them vulnerable to HIV/AIDS and other STDs, as well as unwanted pregnancy and abortion, as shown in studies with this population[9-11].

Rio Grande do Sul appears at the top of the ranking, which considers the first CD4 count, the AIDS case detection rate and AIDS mortality rate, and is one of the priority states for HIV/AIDS-related actions[12]. Rio Grande is located in the extreme south of Brazil and is among the top four ranking positions for cities, according to the composite index. An HIV/AIDS prevalence of 0.6% was found among people aged 15-49, higher than in the general population's prevalence of 0.4%. Considering the local reality and peculiarities of the university population, university students may end up having sex without the use of condoms, which leaves them vulnerable to certain outcomes.

On the other hand, a greater proportion of condom use has been identified in males[13,14] who are single[15,16], younger[17], with casual partnership[18], who had a late onset of sexual life[9,19] and used a condom in the first sexual intercourse[20,21], among other factors. In addition, the use of condoms among adolescents and young people may be influenced by behavioral and psychosocial variables[22,23]. The availability of condoms has also been pointed out as important factor for their use[24]. While less commonly used among university students compared to male[25,26], female condoms appear as an important option in the context of HIV prevention and other STDs[27]. In Brazil, male and female condoms are distributed free of charge. However, it is necessary to develop research to monitor the use of condoms among the different population segments and factors that contribute to the adoption of this protective behavior, especially in municipalities at greater risk.

Studies with university students, especially those related to sexual and reproductive health, often turn to young adults. However, efforts have been made to democratize access to higher education, which may reflect in changes in the configuration of this population segment, including in relation to the age group[28]. Few recent information has been identified in Brazil, particularly in the last four years, on the use of condoms in the general population[29] and, in particular, representative of the population of university students of public educational institutions. As shown, a number of variables associated with the use of condoms have been found in the literature. This research is guided by a hierarchical model built to test whether the association between condom use and certain selected variables is maintained in the university population after control for possible confounders, considering the university context broadly. Thus, this study aims to measure the prevalence of condom use in the last sexual intercourse and the associated factors in students of a public university in the city of Rio Grande, located in the extreme south of Brazil.

Methods

This study is part of a research consortium that aimed to evaluate the health of undergraduate students from a federal public university in the extreme south of Brazil. In 2014, some 8,000

undergraduate students were distributed in 66 courses. The eligible population included male and female university students aged 18 and over regularly enrolled in university undergraduate courses in the first semester of 2015 and studying at the two campuses located in the city of Rio Grande/RS (Carreiros and Saúde). Rio Grande has approximately 197 thousand inhabitants[30].

We used a cross-sectional design with a systematic, single-stage sampling of classes from the list of all the subjects offered by each undergraduate course, consulting the university's electronic system (http://www.furg.br/). This list contained 2,107 individuals, which covered the total number of classes. In order to consider the independent analyses, the sample size estimated for the larger study was of 1,811 subjects. The final sample had 93 classes and all students in each class were invited to participate in the survey.

University students under the age of 18 and students who had taken a leave of absence or dropped out of the course were removed from the general count. Students enrolled in more than one course were counted only once. Thus, the number of eligible university students was 1,736. The number of non-respondents in the study was 313 (18.1%), of which 43 were refusals (2.5%) and 270 losses (15.6%). Regarding the analysis of this paper, university students who had never had a sexual intercourse and those who had not had a sexual intercourse in the 12 months prior to data collection were excluded.

A prevalence estimate of 50%, a 95% confidence level and an error margin of 4 percentage points were used to calculate sample size for prevalence. In the calculation of associated factors, the confidence level was 95%, power 80%, prevalence ratio 1.5 and a minimum proportion of 15% for the exposed groups. In both estimates, 10% were added for losses and refusals, and 20% in order to exclude people who did not have a sexual intercourse from the analysis. A 15% margin was added for confounding control in the calculation of associated factors. The resulting estimates were multiplied by the design effect of 1.5, which considers the size of the conglomerate (mean number of students in each class, set at 20) and the intraclass correlation coefficient (assumed as 0.02)[31]. The sample size initially calculated for this research was 1,089 university students.

The variable endpoint of this paper was operationalized as follows: "Did you or your partner use a condom during the last sexual intercourse (vaginal, oral or anal)?" "(0) No / (1) Yes". There are indications that condom use during the last sexual intercourse can be used as a proxy for other ways of measuring the use of condoms, taking into account the corresponding reminder period[32]. For the analysis of this study, there was no distinction between the type of condom used in the last sexual intercourse, and it could include male and female condoms. Both are relevant for the prevention of HIV/AIDS and other STDs[33]. The availability of female and male condoms may contribute more to reduce the number of unprotected sexual intercourses than when the male condom is available in isolation[34].

Independent variables were: gender (female/male); age in full years, calculated by date of birth and categorized retrospectively (18-19, 20-24, 25-29, ≥30); household income in the previous month collected in reais, which includes the income of the individual (categorized in quartiles); current marital status situation in the following categories: no partner (single, separated or widowed), dating, and married or with a partner / "living together"; the variable "living with", whose categories were: living alone, living with family (parents, stepfather/stepmother, relatives, children, spouse, partner/boyfriend), and living with friends, in a boarding house or student's home; age of first sexual intercourse, collected in years (categorized as: ≤ 14, 15 to 17, ≥ 18); condom use at first sexual intercourse (no/yes), number of sexual partners in the last month, collected as discrete numerical (categorized as none, one, two or more); and type of sexual partner in the last sexual intercourse (steady partner / casual partner).

A self-administered and confidential questionnaire was used as a tool, which consisted of blocks of general questions (socioeconomic, demographic and academic life variables) and blocks of specific questions. In total, 158 questions were formulated. The questions pertaining to the sexual practices and condom use block were built on two tools used in surveys with a sample of adolescents and young people[35,36] and in the reviewed literature, and were organized in the questionnaire according to the corresponding reminder period. The tool was pretested in a pilot study conducted among undergraduate students of the Federal University of Pelotas (neighboring city).

The research was supported by the Undergraduate Pro-Rectory of the university. In addition, prior contact (via e-mail, telephone or face-to-face) was made with faculty members of the disciplines selected to schedule visits and revisits.

The tool's application was standardized and, after completion, students placed the questionnaire in a duly sealed ballot. Data was collected from April to June 2015. All questionnaires were coded, then tabulated in EpiData 3.1 free software and entered twice, with automatic breadth and consistency verification.

Descriptive, bivariate and multivariate statistical analyses were performed with statistical package STATA 13.1[37]. At first, a descriptive analysis was performed, with a description of absolute and relative frequencies. Poisson regression with robust variance was used in bivariate and multivariate analyses, generating the prevalence ratio (PR), 95% confidence interval (CI) and p-value, obtained by the Wald test. In the adjusted analysis, we followed the hierarchical analysis model that is shown in Figure 1. The backward type method was used to select variables, in which the variables of each level were introduced in block, and those with a p-value of < 0.2[38] were maintained to fit the variables of the following level. In all statistical tests, a p-value < 0.05 for two-tailed test was used as the statistical significance level.

All participants signed an informed consent form. The Health Research Ethics Committee (CEPAS) / FURG approved the general project of the research consortium.

Results

In total, 1,423 undergraduate students (81.9% of the total eligible) participated in the study. Then, 186 individuals with no sexual intercourse in the last year were excluded, resulting in 1,237 university students. Of these, 22 (1.8%) had no information for the outcome variable. Thus, 1,215 individuals were analyzed.

The sample mostly consisted of young people aged 20-29 (65.6%) who lived with the family (67.3%), and 50.2% were females (Table 1). The median household income was 3,000 reais (Interquartile Interval of R$ 1,600-R$ 6,000). Most university students had their first sexual intercourse before the age of 18 (69.3%), and 14.9% of the total sample started their sexual life at the age of 14 or less. The mean age of the first sexual intercourse was 16.5 years (SD = 2.3).

The prevalence of condom use in the last sexual intercourse was 41.5% (95% CI: 38.7-44.3). Among the groups with the lowest prevalence are undergraduates who did not use a condom at the first sexual intercourse (27.5%) and those who started their sexual life at the age of 14 or less (29.3%) (Table 2). University students married or with a partner represented just over a quarter of the sample, and the group had the lowest prevalence of condom use at the last sexual in-

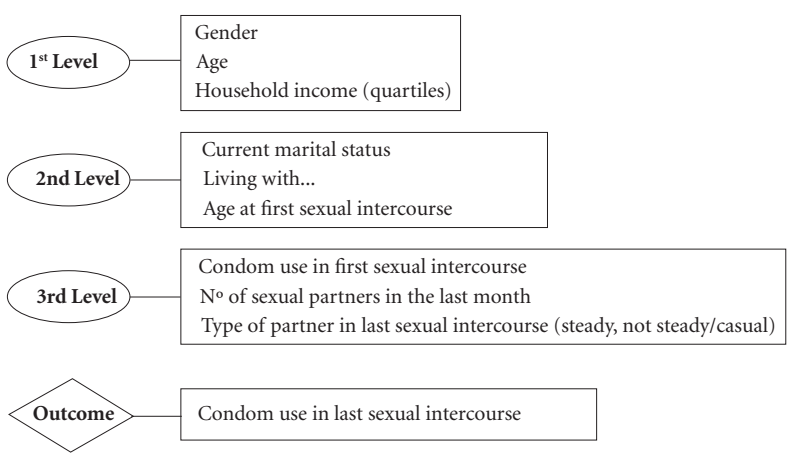

Figure 1. Hierarchical analysis model to investigate the use of condoms in the last sexual intercourse among undergraduate students. Rio Grande, RS, 2015.

Table 1. Description of the sample of 1,215 university students with at least one sexual intercourse in the 12 months prior to data collection. Federal University of Rio Grande (FURG). Rio Grande / RS. 2015.

Variable	N*	% †
Gender (N = 1197)		
Female	601	50.2
Male	596	49.8
Age group (years) (N = 1121)		
18-19	149	13.3
20-24	543	48.4
25-29	193	17.2
≥ 30	236	21.1
Household income (N = 1132)		
1st quartile	266	23.5
2nd quartile	308	27.2
3rd quartile	263	23.2
4th quartile	295	26.1
Current marital status (N = 1207)		
Without a partner	434	36.0
Dating	449	37.2
Married or with a partner / Living together	324	26.8
Living with... (N = 1207)		
Alone	149	12.3
Family	812	67.3
Friends, boarding school or student house	246	20.4
Age at first sexual intercourse (years) (N = 1212)		
≤ 14	181	14.9
15 to 17	659	54.4
≥ 18	372	30.7
Condom in first sexual intercourse (N = 1211)		
No	320	26.4
Yes	891	73.6
Number of sexual partners in the last month (N = 1204)		
None	172	14.3
One	942	78.2
Two or more	90	7.5
Type of partner in the last sexual intercourse (N = 1211)		
Steady partner	920	76.0
Casual partner	291	24.0
Condom use in the last sexual intercourse (N = 1215)		
No	711	58.5
Yes	504	41.5

* The total number of the sample is 1,215. However, depending on the ignored values for each exposure variable, the total sum of the categories can result in a value smaller than the sample size. † Percentage calculated based on the number of respondents.

tercourse (19.1%). On the other hand, a higher prevalence of condom use in the last sexual intercourse was found among students who had a casual partner in their last sexual intercourse (72.9%) and among those who had no sexual intercourse in the last month (condom use was 72.1%) or those who had two or more partners in the last month (66.7%).

In the crude analysis, the following factors increased the probability of condom use at the last sexual intercourse: being male (PR: 1.37, 95% CI: 1.20-1.58), having no partner when the research was performed (PR: 3.36, 95% CI: 2.66-4.25), living with friends, in a boarding school or a student's home (PR: 1.35, 95% CI: 1.17-1.58) (PR: 1.69, 95% CI: 1.40-2.05) and having a casual partner in the last sexual intercourse (PR: 2.30, 95% CI: 2.05 -2.59). Among undergraduates who have shown the lowest condom use are those who had a sexual partner in the last month (PR: 0.46; 95% CI: 0.40-0.52), compared to those who had no partners in the last month (Table 2).

In the adjusted analysis of Table 2, the following variables were associated with condom use in the last sexual intercourse: gender, marital status, condom use in the first sexual intercourse, type of partner in the last sexual intercourse and number of partners in the last month. Both crude and adjusted analyses showed a decline of condom use with age (inverse association) and the lower the age of onset of sexual life (direct association), both with a linear trend p-value < 0.001. Household income had a borderline inverse association in the crude and adjusted analysis, with p = 0.057 and p = 0.058, respectively. The variable "living with" lost association after adjustment (p = 0.786) (Table 2).

Discussion

There is still no consensus on the best way to quantify condom use[39], since different measures are used, each with advantages and drawbacks. However, one of the indicators used in global reports to measure the prevalence of condom use is the use of condoms at the last sexual intercourse[24].

The prevalence of 41.5% (34.9% females and 47.9% males) of condom use in the last sexual intercourse was low, when compared to studies with young people of the general population and research with university students. A study conducted among young Brazilians aged 15-24 of the general population of both genders found a

rate of condom use in the last sexual intercourse of 60%[18]. Among young people from three Brazilian capitals aged 18-24, the use of condoms in the last sexual intercourse was 38.8% for females and 56.0% for males[21]. University students from southern Brazil showed a prevalence of 61.4%, higher than that found in this study[16]. In countries such as China, Canada and the United States, the prevalence of condom use in the last sexual intercourse among university students was 44.2%, 47.2% and 63.8%, respectively, with vary-

Table 2. Prevalence (P) of condom use in the last sexual intercourse in university students who had a sexual intercourse in the last 12 months, according to the variables analyzed (N = 1,215). Rio Grande / RS. 2015.

Variable	P	Crude Analysis			Adjusted Analysis		
		PR	CI95%	P-value	PR	CI95%	P-value
Gender				< 0.001			< 0.001
Female	34.9	1.00			1.00		
Male	47.9	1.37	1.20-1.58		1.42	1.23-1.65	
Age (years)				< 0.001*			< 0.001*
18-19	48.9	1.58	1.23-2.04		1.65	1.27-2.14	
20-24	47.2	1.52	1.24-1.88		1.55	1.24-1.93	
25-29	32.1	1.04	0.78-1.37		1.01	0.75-1.36	
≥ 30	30.9	1.00			1.00		
Household income				0.057*			0.058*
1st quartile	45.9	1.21	0.99-1.47		1.22	1.00-1.49	
2nd quartile	41.6	1.10	0.90-1.33		1.13	0.93-1.38	
3rd quartile	39.9	1.05	0.85-1.30		1.10	0.89-1.35	
4th quartile	38.0	1.00			1.00		
Current marital status				< 0.001			< 0.001
Without a partner	64.3	3.36	2.66-4.25		3.22	2.43-4.25	
Dating	35.6	1.86	1.44-2.41		1.98	1.47-2.67	
Married or with a partner / Living together	19.1	1.00			1.00		
Living with...				< 0.001			0.120
Alone	45.6	1.21	0.99-1.47		0.84	0.68-1.04	
Family	37.8	1.00			1.00		
Friends, boarding school or student house	55.2	1.35	1.17-1.58		0.88	0.75-1.03	
Age at first sexual intercourse (years)				< 0.001*			< 0.001*
≤ 14	29.3	1.00			1.00		
15 to 17	42.0	1.44	1.13-1.83		1.34	1.06-1.70	
≥ 18	46.5	1.59	1.24-2.04		1.63	1.27-2.08	
Condom in first sexual intercourse				< 0.001			< 0.001
No	27.5	1.00			1.00		
Yes	46.6	1.69	1.40-2.05		1.42	1.17-1.71	
Number of sexual partners in the last month				< 0.001			0.009
None	72.1	1.00			1.00		
Um	33.2	0.46	0.40-0.52		0.78	0.66-0.92	
Two or more	66.7	0.92	0.78-1.10		1.00	0.82-1.22	
Type of partner in the last sexual intercourse				< 0.001			0.004
Steady partner	31.6	1.00			1.00		
Casual partner	72.9	2.30	2.05-2.59		1.38	1.11-1.71	

* P-value of Wald test for linear trend. PR: Prevalence ratio. CI95%: Confidence interval of 95%.

ing reminder periods and type of sexual practice investigated[9,14,40].

Considering the high schooling and differentials of university students, it is worth noting that the prevalence found was low. Several issues, besides knowledge about HIV/AIDS and other STDs and perceived risk may be implicated in the adoption of this protective behavior among university students. As mentioned, university students life several new experiences, both related to development itself and the context in which they are inserted. Preventive strategies aimed at this population must consider diversification found in the university context. The availability of male and female condoms and information on their use also appear as interesting strategies. In the university context, a series of relevant knowledge is produced and multiplied and can contribute to the use of actions that result in improved health of the population.

The association between gender and condom use has been shown in several studies, with a lower proportion of protected sexual intercourse among females[13,14,18,21]. Biological and social factors may make women more vulnerable to HIV/AIDS and other STDs compared to men[41,42]. The fact that women still find it hard to assume assertive positions in decisions about sexual and reproductive health, such as the use of condoms is of concern. Efforts were made to promote change to this end, which include empowerment for decision-making and struggle for gender equality[42], since there are a number of hurdles to be tackled. On the other hand, the prevalence of condom use in the last sexual intercourse among men was also low. Both men and women must know how to use appropriate negotiation strategies that increase the likelihood of condom use[43].

Different relationships established may influence the use of condoms. University students engaged in dating, marriage or cohabitation relationships were the majority of the sample, which differs from a study in which university students were not involved in these relationships[25]. It may be that the different proportion of condom use among university students who are dating and those married or with a partner occurs due to the peculiarities of these relationships, including when it comes to negotiating for the adoption of protective behaviors. The inclusion of the dating category was shown to be important in the university context by pointing out such differences in a broad contour of this population.

As relationships become more stable, some individuals replace condoms with other contraceptive methods, such as contraceptive pills[25,44]. Hormonal contraceptives appear as the second contraceptive method choice among undergraduates of Brazilian universities, with condoms being the first[26,45-47]. With stable partners, the focus sometimes becomes pregnancy prevention[46]. This shift ultimately leaves individuals more vulnerable to HIV and other STDs than those who continue to adopt this method. On the other hand, undergraduates without partners were more likely to use condoms at the last sexual intercourse compared to their partners, which was also seen in other studies with university students[14,16,40].

Having a monogamous sexual relationship with an uninfected partner appears to be effective for protection against STDs, but students may be infected and unaware of it, which can lead to transmission to the partner[48]. Moreover, extramarital sexual intercourse activities without condom use is also possible[49]. Currently, combined interventions have proven to be effective and research point to new prevention measures that can be used by serodiscordant couples[29]. However, condoms are a low-cost method and are instrumental in the fight against HIV/AIDS and other STDs, as well as have shown to be the preferred contraceptive method among university students in the studies cited above[26,45-47].

The trend toward the higher age of university students, the lower the use of condoms in the last sexual intercourse was also identified in two recent studies with university students, one conducted in Ethiopia and the other in Canada[8,14]. The fact that 30-year-olds are more likely to have a lower proportion of condom use compared to younger ones may be explained in part by the preference to use other contraceptive methods or even because they are involved in stable relationships, believing that condoms would not be important, as already discussed above. At times, studies with university students overlook the investigation of condom use among university students in mid or late adulthood. This creates a gap in knowledge and direction of actions for this group. Preventive actions are often focused only on the onset of sexual life, especially for adolescents and young people. However, it seems necessary that these actions be carried out continuously and comprehensively. When planning an intervention in the university context, it would be important to adopt approaches that take into account the different age groups and stages of development.

Graduates who started their sexual life earlier were more likely not to use a condom in the

last sexual intercourse. The onset of sexual life appears as an important landmark to human development[46]. Developmental characteristics must be respected so that individuals can make choices that contribute to sexual and reproductive health. Careless first sexual intercourse may have occurred due low age and, as shown, most university students had their first sexual intercourse before the age of 18 (69.3%), with 14.9% of the total sample starting their sexual life with age equal to or less than 14 years. In addition, the first sexual intercourse often happens with people known (in dating relationships, for example)[21] – which may increase risk and reduce protection. Since this was a cross-sectional study, we can only point out this association without defining causality, because there are specific criteria for this[50]. Condom use since the first sexual intercourse is also fundamental, since, according to what our data showed, there was a statistically significant association between use in the first and last sexual intercourse.

The use of condoms in the first and last sexual intercourse has been associated in different studies and related to healthy sexual habits[20,21] and the establishment of condom use patterns[51]. While the design and the tool used do not allow longitudinal generalizations, the continuous use of condoms may be explained in part by the positive consequences that it may bring. The adoption of behaviors are shaped by lifelong experiences. If an individual adopted a certain behavior and this has been somehow strengthened, it is likely to be maintained[52]. Understanding what causes condom use to remain or be extinguished would bring gains to health practices. On the other hand, it is also necessary to pay attention to those who did not use condoms at the first sexual intercourse and continue to adopt this behavior. This implies the investigation of the determinants of non-use in order to act in the strengthening of preventive actions. Sexual intercourse with a reliable person and not talking about contraception before the first sexual intercourse[21] can contribute to this issue.

The prevalence of condom use at the first sexual intercourse (73.6%) was high compared to that observed among individuals from Brazilian urban areas aged 16-19, whose occurrence was 47.8% in 1998 and 65.6% in 2005[53]. On the other hand, it was close to the 71.4% found in another study with university students[16]. The fact that the proportion of condom use at the first sexual intercourse was almost twice that of the last sexual intercourse can be explained in part by issues already discussed, such as the establishment of more stable relationships that focus on prevention of pregnancy and no longer STDs and HIV/AIDS, and preference for other contraceptive methods. Many condom use campaigns focus on casual relationships and may not reach the group with a stable relationship. The presence of condoms in these relationships may have a negative social trait, representing even the possibility of extramarital relationships. While this study did not investigate the age difference between partners, this variable may contribute to explain the difference in proportion, especially for the variables age and gender. It is presumed that individuals whose partner is not in the habit of using condoms will face negotiation difficulties.

Regarding the number of sexual partners in the last month, it is noteworthy that of university students who had a sexual partner (78.2% of the sample), only 33.2% used a condom at the last sexual intercourse. Considering that 64% of university students said they had a partner, a percentage lower than those who reported having had a sexual partner in the last month, some university students may have had a sexual intercourse without the use of condoms, regardless of their marital status. In addition, of those who had two or more partners, 33.3% did not use a condom at the last sexual intercourse and were thus vulnerable to the aforementioned outcomes.

The reminder bias is an important limitation of this study. To minimize it, we only considered people with one sexual intercourse in the 12 months prior to their participation in the survey. Other reminder periods, such as 1, 3 and 6 months have also been used in the literature, and there is no consensus on how best to measure condom use[29,39].

The measured outcome indicates the prevalence of condom use at the last sexual intercourse and its variation among the groups of certain variables. However, it is important to make it clear that it does not measure the continuity, nor the frequency of condom use, and results should be interpreted with caution. Thus, we would need other measures, which were not the objective of this study. Possibly, when studying consistent use, prevalence would be lower. Therefore, when we only adopt condom use during the last sexual intercourse, the prevalence of use may be overestimated, and the difference found may be less than the actual difference or not even a difference can be identified.

Another limitation to be mentioned is the consortium loss rate (270 university students,

equivalent to 15.6% of total eligible), since non-respondents can be distinguished somehow from the participants[50]. The loss index was lower than that of a study conducted with Brazilian university students[54]. The percentage of questions left blank, especially for the variables age (7.7%) and income (6.8%) also deserve mention. This may be a limitation of the application used, which also brought advantages that will be mentioned below. Had these losses not occurred, the statistical power would have been higher, the study would have gained precision and possibly modified the measure of effect. In addition, the estimated use could have been different, either higher or lower.

The reminder period for the number of sexual partners was short, allowing a general idea of the participants who often relate to multiple partners. Since it is a subject that is sometimes a taboo, undergraduates may have given socially expected answers. This may have overestimated the prevalence of condom use. However, the fact that we used a self-administered questionnaire as a tool, which after completion was placed in a sealed ballot may have contributed to minimize the interference of this question. Data found in this study cannot be extrapolated to the whole country, but may apply to federal universities in Rio Grande do Sul.

We provided a current picture on condom use at the last sexual intercourse at the university studied and theoretical details about the factors associated thereof. The research contributed to the identification of groups more and less exposed to the use. Promoting condom use among university students may rely on the availability of condoms, the empowerment of individuals to make decisions about their own sexual and reproductive health, continuous and comprehensive sexual education, as well as action against the myth of invulnerability to HIV and other STDs among university students of different age groups. Regarding the decision-making process on the use of condoms, we showed that the type of relationship that university students establish with their partners may influence the adoption or not of this protective behavior. In addition, we investigated different age groups, among other factors that may contribute to the increased focus of studies and interventions in this context.

Finally, we demonstrated that male university students with a higher age of sexual life onset who used condoms at the first sexual intercourse, younger individuals without a partner and with a casual partner at the last sexual intercourse had a significantly higher proportion of condom use at the last sexual intercourse. Four out of ten university students used condoms at their last sexual intercourse. Knowing the factors associated with the condom use is important in designing actions and programs that monitor condom use and help to adopt protective behaviors.

Collaborations

LR Moreira participated in the design and project, data collection, analysis and interpretation of results and paper's writing. SC Dumith participated in the coordination of the research consortium, data review and paper's critical review. SS Paludo collaborated in the guidance and critical review of all the stages, from design to the paper's elaboration.

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