

## Prevalence of Pattern of Risky Behaviors for Reproductive and Sexual Health Among Middle- and High-School Students<sup>1</sup>

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This research aimed to establish the prevalence and factors associated with the pattern of risky behavior for reproductive and sexual health (PRBRSH) among secondary education students in Santa Marta, Colombia. A cross-sectional study was done. The PRBRSH was defined as having had two or more out of four possible risky sexual practices across the lifetime. Logistic regression was calculated to control for confounding variables. In total, 804 students reported lifetime sexual intercourse. PRBRSH was reported by 36.1% of the sample. Illegal substance use (OR=11.4), alcohol drinking (OR=2.5), being a middle-school student (OR=1.7) and middle or high socioeconomic status (1.4) were associated with PRBRSH. Around one out of three adolescent students is at high risk for HIV infection or unwanted pregnancy. Safe sex practices need to be promoted in this population.

Descriptors: Sexual Behavior; Adolescent; Students; Cross-Sectional Studies.

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## Prevalência do padrão de comportamento de risco para a saúde sexual e reprodutiva em estudantes adolescentes

O objetivo desta pesquisa foi estimar a prevalência e alguns fatores associados ao padrão de comportamento de risco para a saúde sexual e reprodutiva (PCRSSR), em estudantes do segundo grau de Santa Marta, Colômbia. É um estudo transversal. O PCRSSR foi definido como a soma de dois ou mais, de quatro possíveis comportamentos sexuais de risco, durante a vida. Foi usada a regressão logística para controlar as variáveis de confusão. Do estudo participaram 804 estudantes, os quais relataram relações sexuais, 36,1% apresentaram padrão de comportamento de risco para a saúde sexual e reprodutiva. Foram relacionados ao PCRSSR o consumo de uma substância ilegal (OR=11,4), o consumo de álcool (OR=2,5), ser estudante de educação de segundo grau vocacional (OR=1,7) e ter nível de renda média ou alta (1,4). Aproximadamente um de cada três estudantes adolescentes possuía alto risco de infecção para HIV, ou gravidez não planejada. Recomenda-se promover práticas sexuais seguras.

Descritores: Comportamento Sexual; Adolescente; Estudantes; Estudos Transversais.

## Prevalencia de patrón de comportamiento de riesgo para la salud sexual y reproductiva en estudiantes adolescentes

El objetivo de esta investigación fue establecer la prevalencia y factores asociados al patrón de comportamiento de riesgo para la salud sexual y reproductiva (PCRSSR) en estudiantes de secundaria de Santa Marta, Colombia. Se realizó un estudio transversal. Se definió como PCRSSR la suma de dos o más, de cuatro posibles, comportamientos sexuales de riesgo durante la vida. Se usó la regresión logística para controlar variables de confusión. Un grupo de 804 estudiantes informó haber tenido relaciones sexuales. El 36,1% mostró el estándar de comportamiento de riesgo para la salud sexual y reproductiva. Se relacionaron con el PCRSSR el consumo de una sustancia ilegal (OR=11,4), el consumo de alcohol (OR=2,5), el ser estudiante de educación media vocacional (OR=1,7) y el pertenecer al estrato socioeconómico medio o alto (1,4). Aproximadamente uno de cada tres estudiantes adolescentes presenta alto riesgo de ser infectado por el VIH o de sufrir un embarazo no planificado. Se recomienda promover prácticas sexuales seguras.

Descriptorios: Conducta Sexual; Adolescente; Estudiantes; Estudios Transversales.

## Introduction

In Colombia, approximately 25% of secondary education students inform previous sexual relations. Also, these sexually active adolescents mention many unsafe sexual behaviors, including inconsistent condom use, sexual intercourse under the effect of alcohol, sexual relations after consuming illicit drugs and little or recently known sexual partners<sup>(1)</sup>.

To date, research information on risky sexual behaviors has been isolated<sup>(2-4)</sup>. However, the existence of a pattern of risky behavior for reproductive and sexual health (PRBRSH) has been proposed. This means that

several sexual behaviors that represent risks for sexually transmitted infections or unplanned pregnancies are more frequent in the same group of adolescents. Two decades ago, the concept of pattern of risky behaviors for health was proposed, which means that different behaviors that can undermine sexual and physical health are present in the same group of adolescents<sup>(5)</sup>. Likewise, this group displays multiple risky behaviors, such as: cigarette consumption, antisocial behaviors and consumption of several possibly abuse substances<sup>(6)</sup>.

The PRBRSH may be related with individual, family, social and cultural variables that influence the personality characteristics that are being consolidated<sup>(5)</sup>. It is assumed that personality characteristics basically result from the interwoven search for novelty, search for pleasure and avoidance of pain<sup>(7)</sup>. Despite the existence of a National Sexual and Reproductive Health Policy and a National Program for Sexuality and the Construction of Citizenship in Colombia, which emphasize the education and training of young boys, girls and adolescents, until date, sexual behaviors that represent risks for HIV infection or unwanted pregnancies have not been studied as a set or pattern of behaviors, nor have incidence levels and some variables been defined in international or Colombian studies.

This research aimed to determine the prevalence and some variables associated with the PRBRSH among sexually active adolescents in Santa Marta, Colombia.

## Method

A cross-sectional study was designed. Written permission was requested from the participating school boards, the students' parents and each student who agreed to participate. All participants received information about: the study purposes, their voluntary and anonymous participation, and the low physical and psychological risk associated. The Review Boards of a medical school in the city approved the research.

Probabilistic cluster sampling was used in different phases, including all public and private, urban and rural, and middle and high schools in the Santa Marta District. In 2004, 43,261 students were enrolled, according to data by the District Education Secretary. The number of students in each conglomerate was estimated at 35 students. Based on previous research in the city, 20% of students were expected to report a history of sexual relations, with a 5% alpha error and a 2% error margin. The replacement ratio was set at 20% in case of not wanting to participate or if data were missing in the forms. Finally, the sample was doubled to 3,690 participants for the sake of narrower confidence intervals in multivariate analysis.

Participants answered a self-administered form in the classroom, comprising 30 questions about: demographic aspects, sexual behavior and other health-related aspects. Questions include: Have you ever had sexual relations with another person?, How old were you when you had your first sexual relationship?, With how many people have you had sexual intercourse?, Have

you used a condom each time you have had sexual intercourse?, Did you use a condom the last time you had a sexual relation?, Have you had sexual intercourse under the effect of alcohol?, Have you had sexual intercourse under the effect of a drug like marihuana, cocaine or another? and Have you had sexual intercourse with a person you did not know well or had just met? The pattern of risky behaviors for reproductive and sexual health was arbitrarily defined as the sum of two or more risky sexual practices across the lifetime out of four possible options (inconsistent condom use, sexual intercourse after alcohol consumption, sexual intercourse after illegal drugs consumption or sexual intercourse with a person you knew little or recently). After a pilot study and the adjustments needed, this instrument was used in another Colombian research<sup>(8)</sup>. This type of questionnaire has shown excellent reliability in research around the world<sup>(9)</sup>.

Appropriate statistical measures were used for each type of variable (qualitative or quantitative), with confidence intervals set at 95% (CI95%) when necessary. In bivariate analysis, odds ratios (OR) were determined with CI at 95%. Logistic regression was used for multivariate analysis, following common recommendations. In the final model, goodness of fit was estimated. Probabilities under 5% were accepted as significant differences. Data were analyzed using Statistical Package for the Social Sciences software (SPSS 13.0).

## Results

In total, 3,575 adolescents participated in this research. A group of 804 (22.5%) informed previous sexual relations. Ages ranged between 14 and 20 years, with mean for age of 14.8 years (SD=1.7) and 333 students (41.4%) younger than 15. Mean for education was 8.9 years (SD=1.4), 510 students (63.4%) were taking high school education (grades ten or eleven); 629 participants (78.2%) were men; 414 (51.5%) were in public school; 456 (56.7%) belonged to middle or high socioeconomic status; 170 (21.1%) perceived their health status as bad or regular during the last month; 202 (25.1%) described their academic performance as bad or regular during the last month; 330 (41.0%) had experimented cigarettes; 742 (92.3%) had consumed alcoholic beverages; and 64 (8.0%) had consumed some illegal drug, such as marihuana.

With regard to sexual behavior, 33.7% informed inconsistent condom use, 18.4% reported sexual

intercourse after alcohol consumption, 5.8% after illegal drugs consumption and 40.0% had sexual relations with a little known person. A group of 290 students (36.1%) showed a pattern of risky behavior for sexual and reproductive health.

The following odds ratios (OR) were associated, in bivariate analysis, with the PRBRSH: age under 15 years (OR=1.2; CI95% 0.9-1.6), male gender (OR=1.2; CI95% 0.8-1.7), being a high school student (OR=1.3; CI95% 0.9-1.7), going to a public school (OR=0.9; CI95% 0.7-1.2), belonging to a middle or high social class (OR=1.7; CI95% 1.3-2.3), perception of bad or regular health (OR=1.3; CI95% 0.9-1.9), perception of academic performance (OR=1.0; CI95% 0.7-1.4), having experimented cigarettes some time in life (OR=1.7; CI95% 1.3-2.3), having consumed alcoholic beverage some time in life (OR=2.5; CI95% 1.3-4.8) and experimenting some illegal drug (OR=10.2; CI95% 5.2-19.9).

In the multivariate model, it was observed that a significant association continued to exist between the following variables and the PRBRSH: having consumed an illegal drug some time in life (OR=11.4; CI95% 5.7-22.7), having consumed alcohol some time in life (OR=2.5; CI95% 1.3-5.1), being a mid secondary student (OR=1.7; CI95% 1.2-2.4); and belonging to a middle or high socioeconomic status (OR=1.4; CI95% 1.1-2.0). Goodness of fit of this model was adequate (Hosmer-Lemeshow test  $X^2=4.87$ ; degrees of freedom=5;  $p=0.181$ ).

## Discussion

The pattern of risky behavior for sexual and reproductive health was observed in 36% of adolescents with a history of sexual relations. The pattern was more frequent among student who informed previous consumption of an illegal drug some time in life, previous consumption of alcohol some time in life, being a high school student (grades ten and eleven), and belonging to a middle or high socioeconomic class.

No studies are available that inform on the PCRSSR among adolescents in the global context. Until date, most researchers have only informed on the variables associated with sexual relations some time in life<sup>(2-4)</sup>. As several behaviors can jeopardize health, in general, they appear in the same group of people<sup>(10)</sup>. Some recent studies among adolescents have looked at the

following as a whole: sexual behavior, level of physical activity, nutritional habits and consumption of legal and illegal drugs as a pattern of risky behavior for health<sup>(11-12)</sup>.

Undoubtedly, Research needs to adopt an integrated and holistic perspective towards behavior during adolescence. The PCRSSR may be related to the pattern of risky behavior for health, with a common biological or social and cultural predisposition<sup>(5)</sup>. The PCRSSR may be a necessary but insufficient manifestation to observe the pattern of risky behavior for general health. The personality characteristics that are being consolidated during adolescence may very well explain these behavioral patterns<sup>(7)</sup>. Adolescents with antisocial, dependent or paranoid personality characteristics display more risky sexual behaviors for sexually transmitted infections or unplanned pregnancies<sup>(6,13)</sup>.

A collective approach towards adolescents' sexual health is important from a public health perspective, as proposed by the National Sexual and Reproductive Health Policy and the National Program for Sexuality and the Construction of Citizenship by the Ministry of Education of the Republic of Colombia, disseminated in 2008. This group of adolescents needs particular intervention or attention, including specific programs to stimulate safe sexual practices that equally consider the personality characteristics that are being consolidated<sup>(5,7)</sup>. Careful assessment of how these programs affect the sexual behavior of Colombian adolescents will undoubtedly be necessary.

One important contribution of this research is that it gives a composite picture of risky sexual behaviors in adolescents, as a pattern of risky behavior for sexual and reproductive health, which had not been investigated this way until date. The research shows the limits characteristic of a cross-sectional study though, which does not permit clarity on the sense of the association.

## Conclusion

In conclusion, approximately one in every three adolescent students presents a pattern of risky sexual and reproductive health behavior, that is, they are at high risk of HIV infection or unwanted pregnancy. Safe sexual practices need to be promoted and further research is needed on adolescent sexual behavior in general.

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