RESEARCH

PREVALENCE OF BRAZILIAN ADOLESCENTS' SEXUAL AND REPRODUCTIVE HEALTH INDICATORS: A COMPARATIVE ANALYSIS OF THE 2015 AND 2019 NATIONAL SCHOOL HEALTH SURVEY

PREVALÊNCIA DE INDICADORES DE SAÚDE SEXUAL E REPRODUTIVA DOS ADOLESCENTES BRASILEIROS: ANÁLISE COMPARATIVA DA PESQUISA NACIONAL DE SAÚDE DO ESCOLAR 2015 E 2019

PREVALENCIA DE INDICADORES DE SALUD SEXUAL Y REPRODUCTIVA DE LOS ADOLESCENTES BRASILEÑOS: ANÁLISIS COMPARATIVO DE LA ENCUESTA NACIONAL DE SALUD ESCOLAR 2015 Y 2019

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Funding: No funding.

Submitted on: 02/15/2022
Approved on: 06/22/2022

Responsible Editor:
[ID] Tânia Couto Machado Chianca

ABSTRACT

Objective: to compare prevalence estimates of sexual and reproductive health indicators among Brazilian adolescents who participated in the 2015 and 2019 editions of the National School Health Survey (Pesquisa Nacional de Saúde do Escolar, PeNSE). Method: a cross-sectional study that analyzed data from in-school adolescents aged from 13 to 17 years old who answered the 2015 and 2019 editions of PeNSE. Prevalence of the indicators was estimated with 95% confidence intervals according to gender, age group, the school's administrative system and region. Results: the increase in the prevalence of early initiation of sexual activity stands out among the youngest adolescents: 171.2% in the boys and 452.2% in the girls. An increase in the prevalence of teenage pregnancy was also recorded in the Northeast (376.9%) and Southeast (416.6%) regions in the youngest subjects. Among the in-school adolescents aged 16 and 17 from public institutions there was a reduction in condom use in the last intercourse and an increase in the prevalence of receiving guidelines on pregnancy prevention and about HIV/Sexually Transmitted Infections. There was a reduction in the prevalence of access to these guidelines in private schools among the youngest students. In 2019, a reduction in the use of contraceptive pills was observed among the youngest female adolescents from the North, Southeast and Midwest regions. Conclusion: the prevalence of risk sexual behaviors worsened among Brazilian adolescents, including an increase in the number of pregnancies in some regions of the country. The importance of cooperation between the health and education services is emphasized, which should be aligned to promote better life habits, with those related to sexual and reproductive health among young people standing out.

Keywords: Adolescent; Reproductive Health; Health Status Indicators; Condoms; Contraception; Health Policy.

RESUMO

Objetivo: comparar estimativas de prevalência de indicadores de saúde sexual e reprodutiva dos adolescentes brasileiros que participaram das edições 2015 e 2019 da Pesquisa Nacional de Saúde do Escolar (PeNSE). Método: estudo transversal que analisou dados de adolescentes escolares de 13 a 17 anos de idade respondentes da PeNSE 2015 e 2019. Estimou-se a prevalência dos indicadores com intervalos de 95% de confiança de acordo com o sexo, a faixa etária, a dependência administrativa da escola e a região. Resultados: destaca-se o aumento da prevalência de iniciação sexual precoce entre os mais novos, 171,2% entre os meninos e 425,2% entre as meninas. Também houve aumento da prevalência de gravidez na adolescência nas regiões Nordeste (376,9%) e Sudeste (416,6%), entre as mais jovens. Entre os adolescentes de 16 e 17 anos, houve redução do uso de preservativo na última relação e aumento na prevalência de recebimento de orientações sobre prevenção de gravidez e sobre HIV/Infecções Sexualmente Transmissíveis, entre os estudantes de escolas públicas. Houve redução na prevalência de acesso a essas orientações nas escolas privadas entre os mais jovens. Em 2019, observou-se redução no uso de pílulas anticoncepcionais entre as adolescentes mais novas das regiões Norte, Sudeste e Centro-Oeste. Conclusão: houve piora na prevalência dos comportamentos sexuais de risco em adolescentes brasileiros, incluindo o aumento da gravidez em algumas regiões do país. Ressalta-se a importância da cooperação entre os serviços de saúde e de educação, que devem estar alinhados para promover melhores hábitos de vida, destacando os de saúde sexual e reprodutiva entre os jovens.

Palavras-chave: Adolescente; Saúde Reprodutiva; Indicadores Básicos de Saúde; Preservativos; Anticoncepção; Política de saúde.

RESUMEN

Objetivo: comparar las estimaciones de prevalencia de los indicadores de salud sexual y reproductiva de los adolescentes brasileños que participaron en las ediciones 2015 y 2019 de la Encuesta Nacional de Salud Escolar (PeNSE). Método: estudio transversal que analizó los datos de los adolescentes escolares de 13 a 17 años encuestados en la PeNSE 2015 y 2019. La prevalencia de los indicadores se estimó con intervalos de confianza del 95% según el sexo, el grupo de edad, la dependencia administrativa del centro escolar y la región. Resultados: Se distingue el aumento de la prevalencia de la iniciación sexual precoz, entre los más jóvenes, 171,2% entre los chicos y 425,2% entre las chicas. También hubo aumento de la prevalencia de embarazo en la adolescencia en las regiones Nordeste (376,9%) y Sudeste (416,6%),

entre los más jóvenes. Entre los adolescentes de 16 y 17 años, hubo reducción del uso del preservativo en la última relación y aumento en la prevalencia de recibir orientación sobre prevención de embarazo y sobre VIH/infecciones sexualmente transmisibles, entre los alumnos de escuelas públicas. La prevalencia del acceso a esta orientación en las escuelas privadas se redujo entre los más jóvenes. En 2019, se redujo el uso de píldoras anticonceptivas entre los adolescentes más jóvenes de las regiones Norte, Sureste y Centro-Oeste. Conclusión: hubo un empeoramiento de la prevalencia de los comportamientos sexuales de riesgo en los adolescentes brasileños, incluyendo un aumento de los embarazos en algunas regiones del país. Se destaca la importancia de la cooperación entre los servicios sanitarios y educativos, que deben estar alineados, para promover mejores hábitos de vida, destacando los de salud sexual y reproductiva entre los jóvenes.

Palabras clave: Adolescente; Salud Reproductiva; Indicadores de Salud; Condones; Anticoncepción; Política de Salud.

INTRODUCTION

Ensuring adolescents' sexual and reproductive health is a global commitment, which has recently been agreed upon in the Sustainable Development Goals (SDGs), to which Brazil is a signatory. Inclusion of this issue as a priority in national and global health agendas stems, among other things, from the activism of social groups such as the feminist movement and the population of lesbians, gays, bisexuals, transvestites and transsexuals (LGBT+).[1] In addition to that, in recent decades, arduous diplomatic work has been developed in the United Nations Conferences for the formulation of public health policies aimed at young people and for the recognition and guarantee of sexual and reproductive health as a fundamental component of human rights.[1,2]

According to projections, in 2019, the population of Brazilian adolescents aged between 10 and 14 years old was approximately 15 million, with 16 million aged between 15 and 19, representing nearly 15% of the population.[3] In Brazil, since 2009, there has been concern to monitor the health of this young population, with the implementation of the National School Health Survey (PeNSE), a national survey whose objective is to monitor the risk and protective factors for the health of schoolchildren.[4] Among the aspects that PeNSE proposes to evaluate there are sexual and reproductive health indicators, including sexual behavior, contraception and receiving guidelines on pregnancy prevention, on the acquired immunodeficiency virus (HIV) and on other sexually transmitted infections (STIs), as well as on free access to condoms in schools.

Adolescents' sexual and reproductive health is a topic of global interest. Local, regional, national and international data show that this population group remains with worrying levels of risk behaviors, presenting negative outcomes in relation to sexual and reproductive health, such as not using condoms[5] or contraceptive methods,[6] limited access to information,[7] high early pregnancy rates[2] and increase in the number of STIs,[8,9] including HIV among the youngest.[5] These data reinforce the need to monitor these indicators at the national level, especially in the face of setbacks in the sexual health policy for young people in the country,[10] focusing on sexual abstinence as a public policy,[1] even in the face of diverse evidence that shows its insufficiency.[1,11,12]

This monitoring may contribute to fostering the development of intersectoral policies and targeting health education actions for adolescents, in addition to enabling the identification of regional, gender and age differences. Therefore, the objective of this study was to compare the prevalence estimates of the sexual and reproductive health indicators among the adolescents that answered the 2015 and 2019 editions of PeNSE.

METHODS

Study design and population

This is an epidemiological, cross-sectional and descriptive study that resorted to data referring to the sexual and reproductive health of in-school adolescents that answered the last two editions of PeNSE. To ensure comparability of the surveys, the samples analyzed were Sample 2 from 2015 and the sample from 2019, which was the only one in the last edition, as recommended by the IBGE.[4] Both samples represent Brazilian adolescents aged from 13 to 17 years old.[4] These are complex samples by clusters in two stages: the schools, which correspond to the first stage; and the classes in which the students are enrolled, which correspond to the second selection stage.[4] In this way, the set of pupils from each class comprised the sample of students.[4] They were of both genders, attended public and private schools from 6th to 9th grade of Elementary School and from 1st to 3rd year of High School in Sample 2 from 2015. In turn, the 2019 sample corresponded to students attending from 7th to 9th grade of Elementary School and from 1st to 3rd year of High School.[4,13] Further details of the PeNSE sampling plan can be consulted in: https://www.ibge.gov.br/estatisticas/sociais/educacao/9134-pesquisa-nacional-de-saude-do-escolar.html?=&t=conceitos-e-metodos.

Data collection

Data collection was carried out using a structured and self-applied questionnaire on a mobile collection device, a smartphone.[4] This is a questionnaire compared to the internationally standardized one, from the Global School Based Student Health Survey (GSHS), developed by the WHO[14] and which can be consulted in https://www.cdc.gov/gshs. The data collection instrument underwent tests and was evaluated by the Health Surveillance Secretariat belonging to the Ministry of Health; in addition, state supervisors were trained, who passed the information on to interviewers in each state.[4] The questionnaire used had 14 thematic blocks, including sexual and reproductive health, of interest in this study. The sexual and reproductive health block had 12 and 13 questions in the 2015 and 2019 editions, respectively, which allowed monitoring 9 indicators common to both editions.[4,13] The data were extracted from the following website: https://www.ibge.gov.br/estatisticas/sociais/educacao/9134-pesquisa-nacional-de-saude-do-escolar.html?=&t=resultados.

Sexual and reproductive health indicators

The variables common to the 2015 and 2019 editions that were used to describe the adolescents' sexual behavior were the following: report of sexual initiation; age at sexual initiation; condom use in the first sexual intercourse; condom use in the last intercourse; use of contraceptive pills as another contraceptive method in the last intercourse; and history of teenage pregnancy (question only for women), in addition to indicators referring to receiving guidelines at school on pregnancy prevention, HIV/STI prevention, and access to free condoms. All these questions were asked to the self-responding adolescents, as follows: "Have you ever had intercourse (sex)?"; "How old were you when you had intercourse (sex) for the first time?"; "Did you or your partner use a rubber (condom) in your first intercourse?"; "The last time you had intercourse (sex), did you or your partner use a rubber (condom)?"; "The last time you had intercourse (sex), what other method did you or your partner use to avoid pregnancy?"; "Have you ever been pregnant in your life, even if the pregnancy did not end?"; "Have you already received guidance on pregnancy prevention at school?"; "Have you ever received guidance on the prevention of HIV/AIDS or other sexually transmitted diseases/infections at school?"; "Have you ever received guidance at school on how to access free rubbers (condoms)?".

The indicators referring to sexual initiation and receiving guidelines on pregnancy prevention, HIV/STI prevention and obtaining free condoms were estimated for all the adolescents participating in the research, while the prevalence of the other indicators only included adolescents with a positive answer to sexual initiation.

In addition to that, sociodemographic variables of the adolescents were considered, such as gender (male and female), region (North, Northeast, Midwest, South, Southeast) and the school's administrative system (public and private), in addition to the age groups from 13 to 15 years old and 16 and 17 years old.

Data analysis

The prevalence values of the following indicators were estimated: sexual initiation; early sexual initiation; condom use at the first and last sexual intercourse; use of contraceptive pills as another contraceptive method in the last intercourse; history of teenage pregnancy and guidelines received on pregnancy prevention, HIV/STI prevention, and access to free condoms. All the prevalence values were accompanied by calculation of the respective 95% confidence intervals (95% CI) in 2015 and 2019, by gender, age, region of the country and school's administrative system. The percentage change was calculated, at a first moment, by calculating the difference between the years (Prevalence in 2015 – Prevalence in 2019), followed by dividing this difference by the initial prevalence (in 2015). The percentage change was calculated when there was no overlapping between the 95% CIs of the prevalence values between both years. The analysis considered the complex sample design, strata, clusters and weight of the individual to obtain population-based estimates. The SAS (Statistical Analysis System) statistical package, version 9.3, was used.

Ethical Considerations

Both editions of the survey were approved by the National Research Ethics Commission under opinion No. 1,006,467 of March 30th, 2015, and No. 3,249.268 of April 8th, 2019. The study participants had to agree to the Free and Informed Consent Form (FICF), presented on the first page of the Collection Device, and access to the questionnaire was linked to acceptance. Participation was voluntary and the adolescents could abstain from answering any question or even stop answering the questionnaire at any moment.[4,13]

RESULTS

The population of Brazilian in-school adolescents aged from 13 to 17 years old consisted of 50% and 49.3% male individuals in 2015 and 2019, respectively. In both editions of the survey, most of the respondents attended public schools: 87.1% in 2015 and 85.5% in 2019.

No changes in the prevalence of adolescents that had already initiated their sex life were found between 2015 and 2019, with the exception of the youngest boys, among which a 15.0% reduction was noticed (Table 1). However, there was an increase in the prevalence of early sexual initiation in the two age groups studied in both genders, especially the younger ones, among which the increase was 171.2% among boys and 425.2% among girls.

The older female adolescents remained as the group with the highest prevalence of adherence to condom use in their first sexual relationship (68.3%). Regarding condom use in their last intercourse, a reduction was recorded in this group of adolescents (11.3%), although such reduction was higher among the older boys (12.3%). In relation to risk behaviors during the last intercourse, there was a reduction in the prevalence of adolescents who resorted to another method. Although this other method mainly consisted in contraception pills, their use was also reduced regardless of the age group.

Among the older subjects there was an increase in the prevalence of adolescents who had received guidelines about pregnancy prevention (6.4%) from 2015 to 2019, with the exception of the female group. An increase was also recorded among the older boys in the prevalence of having received guidelines about pregnancy prevention (7.5%) and about HIV/STIs (5.5%). On the other hand, when comparing the genders, it was verified that the girls aged from 13 to 15 years old, in both years, received more guidelines on pregnancy prevention (75.6%) and on HIV/STI (81.0%) when compared to boys of the same age.

When analyzing the indicators of the schools' administrative system, in both editions of PeNSE, higher prevalence of early sexual initiation was observed among adolescents from the public schools (Table 2); however, greater growth was noticed in the private institutions. Furthermore, both in 2015 and 2019, the highest prevalence of history of teenage pregnancy was observed among adolescents from public schools, up to nearly four times higher when compared to those from private institutions.

On the other hand, in 2019 there was an increase in the prevalence of adolescents aged 16 and 17 years old who received guidelines about pregnancy prevention (+7.1%) and about HIV/STIs (+4.1%) in public schools. A 7.5% reduction in the prevalence of guidelines about HIV/STIs was also verified in private schools in the youngest age group.

Table 3 presents an analysis of the indicators by regions of the country. In this comparison, an increase was observed in the prevalence or early initiation of sexual activity in all five regions of the country and in both age groups under study. In addition to that, a reduction from 26.5% to 39.9% in the use contraceptive pills was recorded in 2019 among the female adolescents aged from 13 to 15 years old in the North, Southeast and Midwest regions. Among those aged 16 and 17 years old, this reduction was only observed in the Southeast region (27.5%), although there was a reduction of up to 18.6% in condom use in the last intercourse among the adolescents living in the Midwest and Southeast regions.

Also considering the regional differences, it was noticed that there were more history of teenage pregnancy reports among the younger adolescents: 376.9% in the Northeast region and 416.6% in the Southeast region. In the other regions, this indicator remained stable in relation to the same age group. Among the adolescents aged 16 and 17 years old, this prevalence remained stable in all the regions.

DISCUSSION

Some differences were noticed when comparing the estimates of Brazilian adolescents' sexual and reproductive health indicators, with worse indicators in the last survey: 2019. The results showed that more than half of the Brazilian adolescents aged 16 and 17 have already had their sexual initiation and that approximately one third of the boys and one fifth of the girls aged from 13 to 15 have also had some sexual experience. A significant increase in early initiation of sexual activity was observed between 2015 and 2019, both in adolescents attending public and private schools. In both types of school, high prevalence of guidelines about preventing pregnancy and HIV/STIs and about free access to condoms was verified. However, there was a reduction in terms of receiving guidelines on HIV/STI prevention in private schools among younger adolescents and an increase in the guidelines regarding pregnancy and HIV/STI prevention among the older adolescents attending public school.

Table 1 - Prevalence of Brazilian adolescents' sexual and reproductive health indicators and percentage change between the 2015 and 2019 editions of the National School Health Survey (PeNSE), Brazil

Sexual and reproductive health indicators	Total			Female			Male		
	2015 % (95% CI)	2019 % (95% CI)	% Diff.	2015 % (95% CI)	2019 % (95% CI)	% Diff.	2015 % (95% CI)	2019 % (95% CI)	% Diff.
13-15 years old									
Sexual initiation	27.0 (25.1-28.9)	24.3 (23.3-25.2)	-	19.3 (17.3-21.2)	19.4 (18.4-20.4)	-	34.5 (31.6-37.4)	29.3 (28.0-30.6)	-15.0
Sexual initiation at 13 years old or less	15.8 (14.3-17.2)	55.0 (53.4-56.5)	+248.1	8.7 (7.4-10.1)	45.7 (42.9-48.4)	+425.2	22.6 (20.3-24.9)	61.3 (59.4-63.1)	+171.2
Condom use in the first intercourse	59.7 (56.8-62.5)	61.8 (60.3-63.3)	-	66.5 (62.1-70.8)	62.8 (60.5-65.1)	-	56.0 (51.8-60.1)	61.1 (59.2-63.0)	-
Condom use in the last intercourse	60.3 (56.8-63.9)	61.0 (59.5-62.6)	-	61.8 (56.7-67.0)	56.4 (53.9-58.9)	-	59.5 (55.1-63.9)	64.2 (62.4-66.0)	-
Use of another method in the last intercourse: Contraceptive pills	63.4 (58.5-68.4)	48.0 (45.2-50.9)	-24.2	-	-	-	-	-	-
History of teenage pregnancy*	-	-	-	5.2 (3.4-7.7)	7.7 (6.5-8.9)	-	-	-	-
Received guidelines about pregnancy prevention	70.6 (67.8-73.4)	72.6 (71.5-73.7)	-	73.4 (69.9-76.8)	75.6 (74.3-76.9)	-	67.9 (65.0-70.8)	69.5 (68.2-70.8)	-
Received guidelines about HIV/STIs	78.9 (76.6-81.2)	79.4 (78.5-80.3)	-	81.1 (78.4-83.8)	81.0 (79.9-82.1)	-	76.8 (74.3-79.4)	77.8 (76.7-78.8)	-
Received guidelines about how to access free condoms	60.3 (56.8-63.8)	61.7 (60.5-63.0)	-	60.9 (56.5-65.2)	62.6 (61.1-64.1)	-	59.8 (56.2-63.5)	60.8 (59.4-62.2)	-
16-17 years old									
Sexual initiation	54.7 (51.1-58.3)	55.8 (54.5-57.1)	-	49.7 (45.6-53.8)	52.3 (50.5-54.1)	-	59.9 (55.7-64.1)	59.4 (57.9-61.0)	-
First intercourse at 13 years old or less	11.9 (10.3-13.6)	22.0 (20.8-23.1)	+84.8	6.3 (4.5-8.0)	13.4 (12.0-14.8)	+112.6	17.7 (15.0-20.4)	29.8 (28.1-31.4)	+68.3
Condom use in the first intercourse	68.2 (65.1-71.3)	64.5 (63.4-65.7)	-	74.7 (70.1-79.4)	68.3 (66.6-69.9)	-8.5	62.6 (58.9-66.4)	61.1 (59.4-62.9)	-
Condom use in the last intercourse	65.6 (62.3-68.9)	57.6 (56.1-59.2)	-12.1	59.7 (55.9-63.5)	52.9 (50.8-55.1)	-11.3	70.6 (66.3-75.0)	61.9 (60.1-63.7)	-12.3
Use of another method in the last intercourse: Contraceptive pills	70.6 (66.0-75.1)	55.5 (53.5-57.5)	-21.3	-	-	-	-	-	-
History of teenage pregnancy*	-	-	-	8.5 (6.4-11.3)	8.0 (6.9-9.1)	-	-	-	-
Received guidelines about pregnancy prevention	75.9 (73.4-78.3)	80.8 (79.7-81.8)	+6.4	76.4 (72.8-80.0)	80.6 (79.2-81.9)	-	75.3 (72.3-78.4)	81.0 (79.7-82.2)	+7.5
Received guidelines about HIV/STIs	84.3 (82.2-86.4)	87.1 (86.3-88.0)	-	85.4 (82.7-88.0)	86.5 (85.3-87.7)	-	83.2 (80.5-85.9)	87.8 (86.8-88.8)	+5.5
Received guidelines about how to access free condoms	75.2 (73.1-77.3)	78.2 (77.2-79.3)	-	75.1 (72.2-78.1)	77.6 (76.2-79.1)	-	75.3 (72.4-78.2)	78.9 (77.5-80.2)	-

95% CI: 95% Confidence Interval; % Diff: Percentage change in prevalence; *Question conditioned to the female gender.

Table 2 - Prevalence of Brazilian adolescents' sexual and reproductive health indicators and percentage change between the 2015 and 2019 editions of the National School Health Survey (PeNSE) according to the school's administrative system and age, Brazil

Sexual and reproductive health indicators	School's administrative system					
	Public			Private		
	2015 % (95% CI)	2019 % (95% CI)	% Diff.	2015 % (95% CI)	2019 % (95% CI)	% Diff.
13-15 years old						
Sexual initiation	28.6 (26.4-30.7)	26.1 (25.0-27.2)	-	16.7 (13.4-19.9)	14.7 (14.0-15.4)	-
Sexual initiation at 13 years old or less	17.0 (15.4-18.5)	55.8 (54.2-57.5)	+228.2	8.1 (5.8-10.3)	46.5 (44.0-49.0)	+474.0
Condom use in the first intercourse	59.3 (56.3-62.3)	61.5 (59.9-63.2)	-	63.7 (56.3-71.1)	64.3 (62.4-66.1)	-
Condom use in the last intercourse	59.8 (56.0-63.6)	60.7 (59.0-62.4)	-	65.9 (60.3-71.4)	64.2 (61.9-66.4)	-
History of teenage pregnancy*	2.1 (1.37-3.2)	8.3 (7.0-9.5)	+295.2	0.3 (0.0-2.3)	2.0 (1.1-3.0)	-
Received guidelines about pregnancy prevention	69.7 (66.6-72.8)	72.9 (71.6-74.2)	-	76.2 (71.7-80.8)	71.1 (69.7-72.6)	-
Received guidelines about HIV/STIs	77.8 (75.2-80.4)	79.3 (78.3-80.4)	-	86.2 (82.7-89.7)	79.7 (78.5-80.9)	-7.5
Received guidelines about how to access free condoms	62.6 (59.1-66.2)	63.5 (62.0-64.9)	-	45.4 (35.6-55.2)	52.4 (50.5-54.3)	-
16-17 years old						
Sexual initiation	56.5 (52.5-60.5)	57.7 (56.2-59.2)	-	41.9 (35.9-48.0)	42.5 (40.8-44.1)	-
Sexual initiation at 13 years old or less	12.6 (10.8-14.5)	22.7 (21.4-24.0)	+80.1	7.0 (4.7-9.2)	15.1 (13.7-16.5)	+115.7
Condom use in the first intercourse	67.9 (64.5-71.3)	64.2 (63.0-65.5)	-	70.6 (65.5-75.8)	67.4 (65.6-69.2)	-
Condom use in the last intercourse	65.7 (62.3-69.2)	57.3 (55.6-59.0)	-	64.2 (55.1-73.3)	61.1 (59.0-63.1)	-
History of teenage pregnancy*	5.6 (4.1-7.7)	8.5 (7.3-9.6)	-	1.4 (0.4-4.4)	3.3 (2.3-4.4)	-
Received guidelines about pregnancy prevention	75.3 (72.7-77.9)	80.7 (79.5-81.9)	+7.1	79.8 (72.9-86.7)	81.0 (79.4-82.6)	-
Received guidelines about HIV/STIs	83.4 (81.2-85.7)	86.9 (85.9-87.8)	+4.1	90.2 (85.7-94.8)	89.0 (87.7-90.2)	-
Received guidelines about how to access free condoms	75.9 (73.6-78.3)	79.1 (77.9-80.3)	-	70.1 (64.9-75.3)	72.1 (70.1-74.0)	-

95% CI: 95% Confidence Interval; % Diff: Percentage change in prevalence; *Question conditioned to the female gender.

Table 3 - Prevalence of Brazilian adolescents' sexual and reproductive health indicators and of the guidelines received and percentage change between the 2015 and 2019 editions of the National School Health Survey (PeNSE), Brazil

Sexual and reproductive health indicators	North			Northeast			Southeast			South			Midwest		
	2015 % (95% CI)	2019 % (95% CI)	% Diff.	2015 % (95% CI)	2019 % (95% CI)	% Diff.	2015 % (95% CI)	2019 % (95% CI)	% Diff.	2015 % (95% CI)	2019 % (95% CI)	% Diff.	2015 % (95% CI)	2019 % (95% CI)	% Diff.
13-15 years old															
Sexual initiation	31.5 (25.0-38.1)	28.9 (26.3-31.6)	-	25.4 (22.0-28.8)	23.1 (21.6-24.6)	-	26.4 (22.8-30.0)	24.1 (22.2-25.9)	-	29.1 (25.9-32.4)	23.9 (21.7-26.2)	-	26.3 (23.7-28.9)	24.0 (22.6-25.5)	-
Sexual initiation at 13 years old or less	19.3 (14.1-24.4)	56.7 (53.2-60.2)	+193.7	14.3 (11.9-16.7)	55.9 (53.9-58.0)	+290.9	16.4 (13.9-19.0)	55.0 (51.8-58.3)	+235.3	14.6 (12.0-17.2)	51.4 (47.2-55.5)	+252.0	15.7 (13.4-18.0)	54.6 (51.8-57.4)	+247.7
Condom use in the first intercourse	59.0 (53.2-64.8)	60.5 (56.9-64.1)	-	55.8 (51.1-60.5)	60.3 (57.9-62.7)	-	59.1 (53.3-65.0)	60.3 (57.2-63.4)	-	65.9 (60.5-71.2)	69.3 (65.7-72.8)	-	65.0 (59.9-70.1)	63.3 (60.8-65.8)	-
Condom use in the last intercourse	66.9 (61.2-72.6)	62.4 (59.4-65.5)	-	58.4 (52.1-64.7)	61.6 (59.0-64.2)	-	56.5 (49.6-63.5)	58.3 (55.2-61.3)	-	65.7 (60.4-71.0)	66.1 (62.3-69.9)	-	66.8 (62.3-71.2)	61.7 (59.0-64.4)	-
Use of another method in the last intercourse: Contraceptive pills	60.3 (53.6-67.1)	36.2 (30.2-42.3)	-39.9	59.2 (48.0-70.4)	48.0 (43.6-52.3)	-	65.2 (55.6-74.9)	47.7 (42.2-53.2)	-26.8	67.0 (59.5-74.5)	58.9 (51.6-66.2)	-	64.7 (57.2-72.3)	47.5 (42.4-52.5)	-26.5
History of teenage pregnancy*	3.4 (1.3-8.4)	6.0 (4.2-7.8)	-	2.6 (1.3-5.1)	12.4 (9.8-15.0)	+376.9	1.2 (0.4-3.7)	6.2 (4.0-8.4)	+416.5	1.3 (0.5-3.3)	5.5 (2.8-8.2)	-	3.3 (1.7-6.8)	6.2 (4.6-7.8)	-
Received guidelines about pregnancy prevention	67.0 (62.4-71.6)	73.5 (70.4-76.6)	-	68.3 (63.3-73.4)	70.6 (69.1-72.1)	-	70.7 (65.2-76.2)	72.4 (70.1-74.7)	-	74.5 (70.4-78.6)	75.8 (73.2-78.3)	-	75.7 (72.5-79.0)	73.9 (71.9-76.0)	-
Received guidelines about HIV/STIs	76.3 (72.2-80.4)	80.8 (78.1-83.5)	-	75.4 (70.4-80.4)	77.6 (76.3-78.9)	-	79.8 (75.8-83.9)	78.5 (76.5-80.4)	-	81.5 (78.4-84.5)	83.0 (81.1-84.8)	-	85.8 (83.0-88.7)	82.4 (80.7-84.1)	-
Received guidelines about how to access free condoms	53.6 (45.8-61.3)	57.4 (54.9-60.0)	-	56.6 (50.5-62.7)	57.8 (55.7-60.0)	-	60.6 (53.5-67.6)	62.8 (60.3-65.2)	-	68.1 (63.9-72.4)	69.0 (65.9-72.1)	-	67.9 (63.5-72.3)	63.7 (61.6-65.7)	-

...Continued

Table 3 - Prevalence of Brazilian adolescents' sexual and reproductive health indicators and of the guidelines received and percentage change between the 2015 and 2019 editions of the National School Health Survey (PeNSE), Brazil

16-17 years old

Sexual and reproductive health indicators	North 2015 % (95% CI)	North 2019 % (95% CI)	North % Diff.	Northeast 2015 % (95% CI)	Northeast 2019 % (95% CI)	Northeast % Diff.	Southeast 2015 % (95% CI)	Southeast 2019 % (95% CI)	Southeast % Diff.	South 2015 % (95% CI)	South 2019 % (95% CI)	South % Diff.	Midwest 2015 % (95% CI)	Midwest 2019 % (95% CI)	Midwest % Diff.
Sexual initiation	55.1 (47.9-62.3)	60.1 (57.6-62.5)	-	50.6 (42.4-58.8)	52.2 (50.2-54.2)	-	55.0 (49.2-60.9)	56.2 (53.4-59.0)	-	61.5 (56.3-66.6)	58.1 (55.2-61.0)	-	55.8 (50.0-61.5)	56.8 (54.4-59.1)	-
First intercourse at 13 years old or less	13.9 (10.1-17.6)	25.7 (23.7-27.6)	+84.8	9.0 (6.6-11.4)	22.5 (20.5-24.5)	+150.0	13.7 (10.4-16.9)	21.8 (19.4-24.1)	+59.1	10.9 (7.8-14.0)	18.6 (16.1-21.1)	+70.6	13.0 (9.7-16.3)	21.9 (19.6-24.2)	+68.4
Condom use in the first intercourse	70.1 (62.2-78.0)	66.1 (62.7-69.5)	-	64.0 (57.9-70.1)	62.6 (60.3-64.9)	-	67.1 (61.7-72.5)	62.8 (60.8-64.8)	-	75.7 (70.4-81.0)	71.2 (68.6-73.8)	-	72.2 (67.2-77.1)	65.0 (62.3-67.7)	-
Condom use in the last intercourse	74.4 (65.6-83.1)	64.0 (60.3-67.6)	-	64.1 (57.8-70.3)	60.8 (58.8-62.8)	-	64.5 (58.5-70.5)	52.9 (49.7-56.1)	-17.9	63.4 (59.5-67.3)	58.8 (55.8-61.9)	-	71.7 (64.4-78.9)	58.3 (56.3-60.4)	-18.6
Use of another method in the last intercourse: Contraceptive pills	55.4 (41.1-69.7)	43.4 (39.0-47.9)	-	59.3 (50.4-68.3)	48.7 (44.9-52.5)	-	76.1 (68.5-83.8)	55.1 (51.3-58.8)	-27.5	80.5 (74.4-86.7)	72.3 (68.5-76.1)	-	64.9 (55.8-74.0)	57.2 (53.7-60.7)	-
History of teenage pregnancy*	3.5 (1.8-6.6)	8.1 (6.3-9.8)	-	7.1 (4.4-11.3)	9.8 (7.8-11.8)	-	5.3 (3.0-9.2)	8.1 (6.0-10.3)	-	3.8 (0.2-7.8)	4.6 (2.7-6.5)	-	4.63 (2.3-9.13)	7.7 (5.4-10.0)	-
Received guidelines about pregnancy prevention	79.6 (74.8-84.3)	79.2 (76.4-82.0)	-	71.9 (67.1-76.7)	78.6 (76.9-80.3)	+9.3	75.4 (71.1-79.6)	81.4 (79.3-83.5)	-	79.8 (74.4-85.1)	84.5 (81.7-87.4)	-	83.0 (79.6-86.4)	80.8 (78.6-83.0)	-
Received guidelines about HIV/STIs	86.5 (82.3-90.7)	86.0 (83.1-88.8)	-	82.5 (78.9-86.2)	85.6 (84.1-87.1)	-	83.4 (79.5-87.3)	87.0 (85.5-88.4)	-	85.7 (81.9-89.5)	90.5 (88.3-92.6)	-	91.0 (88.1-93.9)	89.1 (87.5-90.7)	-
Received guidelines about how to access free condoms	76.0 (69.1-82.8)	74.1 (71.9-76.4)	-	70.7 (66.4-74.9)	75.2 (73.1-77.4)	-	74.9 (71.4-78.3)	79.1 (77.4-80.9)	-	80.8 (76.3-85.4)	83.4 (80.5-86.2)	-	83.6 (79.9-87.4)	81.4 (79.3-83.5)	-

95% CI: 95% Confidence Interval; % Diff: Percentage change in prevalence; *Question conditioned to the female gender.

Additionally, among those aged from 13 to 15 years old in the North, Southeast and Midwest regions and from 16 to 17 in the Southeast, there was a reduction in the use of contraceptive pills at the time of their last intercourse, in addition to a reduction in condom use in the last intercourse among adolescents from the Midwest and Southeast regions. In addition, there was higher prevalence of pregnancy history among the adolescents living in the Northeast region, which is in line with what was observed in the Information System on Live Births (Sistema de Informações sobre Nascidos Vivos, SINASC) belonging to the Ministry of Health, according to which, in 2019, there was a higher rate of teenage pregnancy in this region of the country.[15] Thus, it can be asserted that the findings of this study point to some inequalities across regions of the country, which were also revealed by the worse performance of some indicators, such as use of contraceptive methods, history of teenage pregnancy and receiving guidelines on pregnancy prevention and use and access to condoms among the young people attending public schools.

Regarding the prevalence of sexual initiation among the adolescents, it remained stable between both editions of the survey, although the prevalence of sexual initiation at 13 years old or less was increased in both genders. It is known that early sexual initiation can exert a negative impact on the adolescents' lives due to greater vulnerabilities to HIV/STIs, unplanned pregnancy and violence.[16] This result highlights the need for more effective interventions to promote and guarantee adolescents' sexual and reproductive health, which requires theoretical and technical knowledge to understand the sociocultural, economic and social differences present in the country. Likewise, it is necessary to implement competent public policies that meet this demand in a safe and responsible manner.[1,2,7] Thus, it would be possible to guarantee access to information and the opportunity for prevention, as opposed to ineffective government proposals[11,12] which advocate sexual abstinence to prevent the problem.[2] This goes against access to health care and the guarantee of sexual and reproductive rights for the young Brazilian population.[11,12] Thus, these proposals can be considered a setback, as they are not intended to instruct adolescents about possible risks and ways to minimize or even eliminate them.

There is no consensus on the mean age at sexual initiation, due to the regional and cultural differences and vulnerabilities that can exert impacts on this activity, as well as the differences found in the conduction of different studies.[7,14,17] For example, a local study carried out in Pouso Alegre, Minas Gerais, showed that the mean age for sexarche is around 14 to 15 years old.[7] On the other hand, a national study with adults showed that the mean age reported at the first intercourse was 17 years old.[17] In addition, a study with national data found a reduction in the prevalence of in-school adolescents who had already had sexual relations[14], corroborating the findings of the current study, in which a reduction in sexual initiation was observed in male adolescents aged from 13 to 15 years old, which can be justified by intimate and personal aspects, but also as a result of public health policies.[2]

In some regions, there was a reduction in the use of condoms and contraceptive pills, which can also be a reflection of setbacks in sexual orientation policies insisting on sexual abstinence.[1,11] Furthermore, in relation to the other indicators there is certain stagnation, which shows the need for constant investment in public policies capable of considering the specific characteristics of adolescence. In other words, it is necessary to undo the setbacks, reintroduce withdrawn interventions, and advance towards ensuring rights.

Another relevant aspect is the decrease regarding provision of HIV/STI guidelines in private schools, in contrast to previous findings that indicated stability in receiving this type of information between 2009 and 2015.[14] This reduction can be related to the increase noticed in the incidence of STIs among adolescents, especially boys.[8,9] Therefore, the indicator referring to receiving guidelines on free access to condoms had its prevalence reduced, which can contribute to the reduction of their use and, consequently, generate an increase in unsafe pregnancy and STI rates, as well as supporting maintenance of the teenage pregnancy rates in the country.[18,19]

This study also identified stability in the prevalence values observed in the sexual and reproductive health indicators among boys and girls, which has already been observed in previous studies. This stability is also related to the difference found between boys and girls and can be explained by the gender issues. In general, girls have higher levels of knowledge in relation to sexual and reproductive health, which may reflect better behaviors when compared to boys; in addition, they assume greater responsibilities in issues involving both pregnancy and STI prevention, corroborating previous studies.[2,7,16] This fact can be explained by the

historical and social patterns related to the behaviors that are expected from boys and girls.[2]

The results show a reduction in condom use, both in the first and in the last intercourse, which, among other issues, shows certain weakness in the guidelines provided to the students, corroborating a phenomenon that has been observed throughout the world,[20,21] even among Brazilian adults.[17] People claim to know the importance of using condoms and the consequences of not doing so, but they still do not use them.[5] Condom use may even be associated with cultural and age differences. In general, the prevalence of their use in the first intercourse is higher;[7] on the other hand, condom use in the last intercourse tends to be lower since, when a person is in a stable relationship, abandonment of this type of protection is common.[5] High discontinuation rates of this contraceptive method are also observed.[22,23] Additionally, there was a change in the choice of answers to the questions related to these indicators, with the of "I don't know" option no longer being available in 2019, which might imply an increase in the prevalence of non-use observed in the young individuals aged 16 and 17 years old. Thus, this change in the questionnaire for these specific indicators needs to be taken into account when interpreting the results.

A limitation of the current study would be in relation to the age groups adopted: they guarantee comparability with other national and international studies, but it is known that, in terms of biopsychosocial development, age groups differ between boys and girls.[24] Nevertheless, these groups include young individuals in initial or early (13-15 years old) and middle (15-16 years old) adolescence[24], allowing population estimates of aspects related to Brazilian adolescents' sexual and reproductive health.

Another limitation of this study lies in the fact that only in-school adolescents were included, i.e., those duly enrolled in public or private schools. In 2019, nearly 10.8% of the young individuals in this age group (from 15 to 17 years old) were not enrolled in any school.[25] Non-inclusion of these young subjects might contribute to better results, as it is known that the higher the schooling level, the greater the chance and opportunity for better behaviors, configuring a conservative bias. The variables that were not common to both editions were not used in this study. In 2019, for example, the question about the number of partners was not included, precluding the comparison with the 2015 data. Despite these limitations, this study advances in monitoring the Brazilian adolescents' sexual and reproductive health indicators, pointing out setbacks and urgent needs in relation to the health of this specific population group.

CONCLUSION

This study showed that the prevalence of risk sexual behaviors worsened among Brazilian adolescents, including an increase in the number of pregnancies in some regions of the country. Some inequalities were also observed, such as higher risk to the sexual and reproductive health of the young individuals attending public schools and living in the Northeast and north regions. The increase in early initiation of sexual activity also stands out, as well as in the history of teenage pregnancy and in the provision of guidelines at the schools.

The results of this study also showed a reduction in the use of contraceptive pills and in condom use, drawing a scenario of sexual behaviors that put adolescents' health and lives at risk. These findings reveal certain weakness in terms of effective and consubstantiated policies and actions targeted at this population group. They also show the consequences of interrupting health promotion strategies for these young people, as seen in this comparison, between 2015 and 2019, which may be related to the institution of inconsistent policies that go against the guarantee of access to health and of the sexual and reproductive rights of the young Brazilian population.

In this context, the importance of cooperation between health and education services is highlighted, which must be aligned in order to promote better life habits, including sexual and reproductive health habits among young people. It is worth mentioning the importance of aligning adolescents' sexual and reproductive rights with greater access to quality information and knowledge on the topic, which contributes to more conscious decision-making on sexual initiation, use of contraceptive methods and prevention of pregnancy and HIV/STIs.

ACKNOWLEDGMENTS

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