



## Factors associated with health risk behaviors among Brazilian adolescents: an integrative review\*

Fatores associados aos comportamentos de risco à saúde entre adolescentes brasileiros: uma revisão integrativa

Factores asociados con los comportamientos de riesgo sanitario entre adolescentes brasileños: una revisión integrativa

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### ABSTRACT

**Objective:** Identifying knowledge about factors associated with health risk behaviors among Brazilian adolescents. **Method:** An integrative review of the literature conducted in the Cochrane, IBECs, LILACS, MEDLINE and SciELO databases in relation to risk behaviors recommended by the Centers for Disease Control and Prevention. **Results:** Thirty-seven (37) studies were analyzed, with a predominance of risky sexual behavior, tobacco use and violent behavior. Advancing age favored unprotected sex, alcohol and tobacco use. Family and friends influence was related to smoking and alcoholism. Males were more involved in situations of violence and the female gender was associated with physical inactivity. Belonging to a lower economic class was related to unprotected sex, physical inactivity, unhealthy dietary behaviors and violence. Studying in private school was related to unhealthy dietary behavior. **Conclusion:** Risk behaviors were related to social, economic and family factors and they tend to agglomerate.

### DESCRIPTORS

Adolescent; Adolescent Health; Adolescent Behavior; Risk-Taking; Pediatric Nursing; Review.

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## INTRODUCTION

The involvement of an individual in activities that leads to impairment of their physical and/or mental health can define what are called Health Risk Behaviors (HRB). These behaviors result from some choices and attitudes that tend to negatively impact the health of young individuals, leading to premature risk of morbidity and mortality<sup>(1)</sup>. The proportion of adolescents exposed to one or more HRB has been shown to be high in different countries<sup>(2)</sup>. Studies indicate that 50% to 65% of them exceed two or more behaviors, in addition to simultaneous exposure to several of these behaviors at this stage of life, and also in adulthood<sup>(3)</sup>.

Every year in the United States young Americans have their behavior monitored according to an instrument proposed by the Youth Risk Behavior Surveillance System, created in 1991. Six categories of priority HRB were listed among young individuals and young adults, such as unintentional injuries and violence, tobacco use, alcohol and other drugs use, sexual behaviors related to unintended pregnancy and sexually transmitted diseases, unhealthy eating habits and physical inactivity<sup>(4,5)</sup>.

In view of the diversity of situations considered to be risky to adolescent health and the need for interventions, it is essential to carry out studies that better diagnose and understand this scenario in the different national contexts. The present literature review aims at discussing the factors associated to risk behaviors among Brazilian adolescents based on the risk behaviors defined by the *Centers for Disease Control and Prevention* (CDC). A review on this theme may be useful in proposing public health interventions that promote the adoption of healthy behaviors among youths. Similarly, they may contribute to training professionals who realize how important it is to act preventively in the health/disease process.

## METHOD

An integrative review of the literature on HRB among Brazilian adolescents was carried out. This type of study allows for searching, evaluating and synthesizing the available evidence on a particular topic. The results portray the current position of what is investigated, which contributes to greater effectiveness in health actions with lower costs, in addition to identifying gaps that can guide the development of future studies<sup>(6)</sup>.

The study design was based on six distinct stages: elaborating the research problem, selecting the sample according to the appropriate descriptors of the theme, data collection, evaluating the elements related to the theme, analyzing and interpreting the collected results, and disseminating the data.

The search for publications was carried out in January 2016 based on the articles published in the Virtual Health Library (VHL) through the website [www.bvsalud.org](http://www.bvsalud.org). The VHL integrates the Cochrane Library, the Spanish Bibliographical Index on Health Sciences (IBECS), the bibliographic index of scientific and technical literature of Latin America and the Caribbean (LILACS), the Medical Literature Analysis and Retrieval System (MEDLINE) and the Scientific Electronic Library Online (SciELO).

The evaluated HRB correspond to those recommended by the CDC: tobacco use, alcohol and other drugs use, sexual behaviors related to unintended pregnancy and sexually transmitted diseases (including HIV infection), unhealthy dietary behaviors and physical inactivity<sup>(5)</sup>.

The descriptors contained in the Medical Subject Headings (MeSH) coinciding with those belonging to the Descriptors in Health Sciences (DECS) were defined and searched in the VHL: “*Feeding behavior*”; “*Adolescent behavior*”; “*Risk*”; “*Tobacco use*”; “*Behavior*”; “*Motor activity*”; “*Adolescent*”; “*Violence*”; “*Sexual behavior*”; “*Risk-taking*” and “*Alcoholism*”.

The descriptors were used in the search for studies that contained them in the title, abstract and subject. The Boolean operator “AND” was used in the following combinations for the crossings: *Feeding behavior AND Risk AND Adolescent AND Brazil*; *Adolescent behavior AND Risk AND Tobacco use AND Brazil*; *Adolescent behavior AND Risk AND Alcoholism*; *Risk-taking AND Motor activity AND Adolescent AND Brazil*; *Risk-taking AND Risk AND Violence AND Adolescent AND Brazil*; *Risk-taking AND Sexual behavior AND Adolescent AND Brazil*; *Risk-taking AND Adolescent AND Brazil*.

Publications addressing associations of HRB among Brazilian adolescents without language restriction in the last 10 years (2005-2015) were included. For the initial selection studies that did not meet the inclusion criteria, those that did not contemplate the Brazilian scenario or those that did not provide abstracts were excluded. Editorials, theoretical reflections, reports of experiences and reviews, dissertations, monographs, theses and abstracts in annals of events were also excluded.

The tools of the *Joanna Briggs Institute: JBI Critical Appraisal Checklist descriptive/Case Series and JBI critical Appraisal Checklist for Comparable Cohort/Case control*<sup>(7)</sup> were implemented for the qualitative evaluation of the methods described in the studies. A summary of the publications selected by a synoptic chart sought to order and evaluate the researchers' degree of agreement in relation to the investigated subject.

## RESULTS

A total of 460 studies were found, and 64 articles were selected after reading and analyzing the titles and abstracts. From a complete reading of each of these, 37 articles that met the proposed objective were selected and are presented below.

Publications that investigated different HRB among adolescents totaled 32.5%. The most researched risk behavior in the country in the proposed temporal clipping was sexual behavior (18.9%), followed by tobacco use (13.5%) and violent behavior (10.8%). Alcohol use, risky dietary behavior and physical inactivity presented a prevalence of 8.1% each.

Chart 1 presents the publication characterization of the final sample organized into six themes and according to the HRB elected for the study. The following information is described for each publication: main author, journal, year of publication, objectives, design and variable of interest, which allowed for better visualization of relevant information, comparisons and identification of behavioral patterns.

Most studies were published in 2014 (24.3%, n=9) and 2013 (19%, n=7). The others were published between the years 2006 and 2011. The most frequent design was cross-sectional descriptive (92%, n=34). All studies were conducted in Brazil in different cities and regions. The predominant language was English (54%, n=20), followed by Portuguese (46%, n=17). The predominance of articles in English results from the current guidelines and recommendations of the journals in using this language.

Regarding methodological quality in accordance to the tools proposed by the *Joanna Briggs Institute* (JBI), the selected studies were approved when they answered at least

half (50%) of the questions comprising the checklist indicated for each instrument. One of them, the *JBI Critical Appraisal Checklist for Comparable Cohort/Case control*, analyzed the sample representativeness in the population and the choice of statistical methods. The second instrument, the *JBI Critical Appraisal Checklist for Descriptive/Case Series*, assessed whether there was clarity in the defined inclusion criteria, and whether there was adequate exposure of the groups when comparisons were described. All articles met the requirements for objectivity and reliability considered as the criteria for evaluating the results through a detailed description of the analysis methodology<sup>(7)</sup>.

**Chart 1** – Characterization of the publications regarding the objective, design and factors related to health risk behaviors. Brazil, 2016.

Authors	Objectives	Design	Factors associated with HRB among Brazilian adolescents
Bittencourt <i>et al.</i> , 2013 <sup>(8)</sup>	To estimate risk factors associated with eating disorders in schoolchildren in the city of Salvador, Bahia.	Quantitative/descriptive/retrospective/cross-sectional	Non-white females are at risk of eating disorders (p=0.0087).
Fortes <i>et al.</i> , 2013 <sup>(9)</sup>	To associate body dissatisfaction, degree of psychological commitment to exercise, body adiposity, nutritional status, economic level and ethnicity to inappropriate food behavior.	Quantitative/descriptive/retrospective/cross-sectional	The related HRB was associated with body dissatisfaction, exercise commitment and economic level for girls (p <0.05). For boys, body fat, body dissatisfaction and nutritional status were associated with inadequate dietary behavior (p <0.05). Body dissatisfaction among adolescents was the most important predictor for risk related to inadequate dietary patterns.
Fernandes <i>et al.</i> , 2008 <sup>(10)</sup>	To analyze the association between risk factors and overweight among adolescents from different socioeconomic classes.	Quantitative/descriptive/retrospective/cross-sectional	Inadequate food intake among lower classes (OR=4.59) and parents being overweight (OR=5.33) were associated with being overweight. Among higher classes, the mother's schooling (OR=0.57), private school (OR=3.04) and parents being overweight (OR=3.47) were associated with being overweight.
Menezes <i>et al.</i> , 2014 <sup>(11)</sup>	To identify factors associated with regular cigarette smoking by adolescents.	Quantitative/descriptive/retrospective/cross-sectional	The factors age ≥ 15 years (p=0.011) and having friends who smoke (p<0.0001) were associated with smoking.
Bonilha <i>et al.</i> , 2013 <sup>(12)</sup>	To characterize the motivators for smoking among adolescents and to investigate the influence of clinical and social elements.	Quantitative/descriptive/retrospective/cross-sectional	Advanced age, school failure, use of illicit drugs, alcohol abuse, high levels of perceived stress and the death of at least one parent were associated with smoking (p<0.05).
Oliveira <i>et al.</i> , 2010 <sup>(13)</sup>	To evaluate risk factors for tobacco use in students from two high schools in Santo André (SP).	Quantitative/descriptive/retrospective/cross-sectional	In the private school, mothers and friends who smoke were associated with trying smoking (p<0.01). In the public school, alcohol consumption, friends who smoke and contact with cigarette smoke were associated with trying smoking (p<0.01).
Vieira <i>et al.</i> , 2008 <sup>(14)</sup>	To analyze the behavior of public school students of Gravataí (RS) in relation to the consumption of alcohol, tobacco and other drugs and associated factors.	Quantitative/descriptive/retrospective/cross-sectional	Smoking experimentation was 11.1 times higher among young people who reported having friends who smoke (p<0.000). Using tobacco and alcohol (last 30 days) was associated with feelings of sadness, isolation, difficulty in sleeping and suicidal ideation. The use of other drugs has been associated with reports of loneliness and suicide plans (p<0.000).
Tassitano <i>et al.</i> , 2014 <sup>(15)</sup>	To assess the aggregation of the four main HRB (smoking, alcohol use, physical inactivity and low consumption of fruit, vegetables and greens) related to CNCD (Chronic Non-Communicable diseases) in Northeastern Brazil.	Quantitative/descriptive/retrospective/cross-sectional	The aggregation of HRB is a trend, particularly of tobacco and alcohol use, more observed among boys. Low physical activity and consumption below what is necessary of fruit, vegetables and greens was observed among the girls (p<0.05).
Petribú <i>et al.</i> , 2011 <sup>(16)</sup>	To investigate the prevalence and factors associated with overweight and obesity in high school students of the public state network in Caruaru (PE).	Quantitative/descriptive/retrospective/cross-sectional	Perception of stress (p=0.02), regular use of alcohol and physical inactivity were associated with overweight (p<0.001).
Moraes <i>et al.</i> , 2009 <sup>(17)</sup>	To estimate the prevalence of physical inactivity among adolescents (14 to 18 years) in Maringá (PR) and its association with demographic, socioeconomic, behavioral and nutritional variables.	Quantitative/descriptive/retrospective/cross-sectional	Physical inactivity was prevalent among 56.9% of adolescents (boys=55.7%, p=0.46 and girls=57.9%). Lower socioeconomic status, being a public school student and being overweight were associated as risk factors.

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Authors	Objectives	Design	Factors associated with HRB among Brazilian adolescents
Hallal <i>et al.</i> , 2006 <sup>(18)</sup>	To evaluate the prevalence of sedentarism and associated factors in 4,452 adolescents aged 10 to 12 years, of a 1993 birth cohort in Pelotas (RS).	Quantitative/descriptive/ Retrospective/Cohort	Being sedentary was positively associated with being a young women, with the socioeconomic level, to the fact that the mother was inactive and the amount of time in front of the television ( $p<0.001$ ). Low economic level was associated to a higher number of times of active movement towards school ( $p<0.001$ ).
Silva <i>et al.</i> , 2014 <sup>(19)</sup>	To identify the prevalence and factors associated with violent behavior among adolescents in the greater Aracaju area.	Quantitative/descriptive/ retrospective/cross-sectional	An association was observed between violent behavior and smoking ( $p<0.01$ ). Violent behavior was associated with the use of alcohol and cigarettes.
Malta <i>et al.</i> , 2014 <sup>(20)</sup>	To analyze the prevalence of alcohol consumption among adolescent students and identify associated individual and contextual factors.	Quantitative/descriptive/ retrospective/cross-sectional	When alcohol consumption was higher in the previous month, it was associated with: being 15 years of age or older; female; white skin; being the child of a mother with a higher education level; studying in private school; trying cigarettes; using drugs and cigarettes regularly and having had sexual intercourse ( $p=0.000$ ).
Malta <i>et al.</i> , 2010 <sup>(21)</sup>	To present the main results of the Student National Health Survey ( <i>Pesquisa Nacional de Saúde do Escolar</i> ).	Quantitative/descriptive/ retrospective/cross-sectional	Occurrences of violence prevailed among boys.
Castro <i>et al.</i> , 2011 <sup>(22)</sup>	To estimate the prevalence of violence among adolescents and young adults and identify the associated factors.	Quantitative/descriptive/ retrospective/cross-sectional	Violence behaviors were associated with alcohol consumption (PR=2.51, 95% CI = 1.22-5.15), use of psychoactive drugs (PR=2.10, 95% CI = 1.61-2.75), males (PR=1.63, 95% CI = 1.13-2.35) and dissatisfaction in the relationship with parents (PR=1.64, 95% CI = 1.25-2.15). High prevalence of violence among 12-to-19-year-old male individuals, who consume alcohol and drugs, from families whose adolescents experience satisfactory relationships.
Teixeira <i>et al.</i> , 2010 <sup>(23)</sup>	Identify factors associated with unprotected sexual activity in female adolescents under 15 years of age.	Quantitative/descriptive/ retrospective/cross-sectional	Unprotected sex was associated with the first relationship before the age of 13, sexual exploitation for commercial purposes, multiplicity of sexual partners, violence within the family, delay in school life, black race/skin color, unintended pregnancy and STDs ( $p<0.05$ ).
Moreira <i>et al.</i> , 2008 <sup>(24)</sup>	To verify the existence of an association between victimization and alcohol use among boys and girls from Porto Alegre.	Quantitative/descriptive/ retrospective/cross-sectional	Teenagers became drunk more than pre-teenagers; 32% of boys, 22% of girls who suffered intense violence reported being drunk at least once.
Assis <i>et al.</i> , 2014 <sup>(25)</sup>	To analyze the relationship between sexual behavior and risk factors for physical or mental health among adolescents.	Quantitative/descriptive/ retrospective/cross-sectional	Young people who declare being homo/bisexual in comparison to heterosexuals reported ( $p<0.05$ ), respectively: getting drunk (18.7 and 10.5%), frequently using marijuana (6.1 and 2.1%), having suicidal thoughts (42.5 and 18.7%) and having suffered sexual violence (11.7 and 1.5%). Those who declared being homo/bisexual used condoms less frequently (74.2%) in relation to those who declared themselves as heterosexuals (48.6%, $p<0.001$ ).
Morrison <i>et al.</i> , 2014 <sup>(26)</sup>	To examine the difference in the prevalence of drug use and risky sexual behavior among high-risk adolescents in programs offered by organizations in the community of Juiz de Fora (MG).	Quantitative/descriptive/ retrospective/ cross-sectional	Abandonment and homelessness associated with drug and alcohol use were more commonly reported by young males ( $p<0.05$ ). The girls reported high-risk sexual behavior associated with crime ( $p<0.05$ ). Young people belonging to NGOs had a lower propensity for HRB ( $p<0.05$ ).
Oliveira-Campos <i>et al.</i> , 2013 <sup>(27)</sup>	To investigate the factors related to family and school contexts associated with sexual behavior	Quantitative/descriptive/ retrospective/cross-sectional	21% of sexually active adolescents who did not use protection the last time they had sex. Never having meals with their parents increased the incidence of unprotected sex (OR=1.60).
Costa <i>et al.</i> , 2013 <sup>(28)</sup>	To investigate the vulnerability of school adolescents in relation to STDs and HIV, identifying the main HRB and prevention.	Quantitative/descriptive/ retrospective/cross-sectional	The habit of using condoms was associated with its use in the last sexual intercourse experienced by the majority of the youth (86.3%) ( $p=0.001$ ).
Moura <i>et al.</i> , 2013 <sup>(29)</sup>	To investigate the gaps in knowledge about HIV/AIDS and sexual behavior among high school adolescents.	Quantitative/descriptive/ retrospective/cross-sectional	Sexual intercourse maintained in the last six months was associated with condom use the first time ( $p<0.001$ ). Frequent condom use and having multiple partners were not associated with having knowledge about HIV/AIDS.
Silva <i>et al.</i> , 2013 <sup>(30)</sup>	To identify factors associated with the recurrence of pregnancy in adolescents.	Quantitative/descriptive/ case control	Recurrence of pregnancy in adolescence was associated with the first sexual intercourse before 15 years, being primigravida (first time pregnant) before the age of 16, not gestation, associated factors were first sexual intercourse <15 years, age of first gestation <16 years, family income less than one minimum wage and the fact that they were not involved in the care of the children ( $p<0.0001$ ). Change of partner was a protective factor ( $p=0.03$ ).

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Authors	Objectives	Design	Factors associated with HRB among Brazilian adolescents
Viana <i>et al.</i> , 2007 <sup>(31)</sup>	To evaluate factors associated with the practice of safe sex among sexually active adolescents from public schools in Minas Gerais.	Quantitative/descriptive/retrospective/cross-sectional	For young boys, the presence of health workers at the school was positively associated with indicators of safe sex. Having a mother with more than eight years of schooling was positively associated with condom use with a single partner or with occasional partners ( $p < 0.005$ ).
Martins <i>et al.</i> , 2006 <sup>(32)</sup>	To compare knowledge about STD/AIDS and evaluate factors associated with knowledge and consistent male condom use among public and private schools of São Paulo (SP).	Quantitative/descriptive/retrospective/cross-sectional	Condom use was frequent and adequate in 60% of private schools and 57.1% of public schools ( $p < 0.05$ ). An association with young males and low socioeconomic status was observed. Being a girl, white and single were the factors most associated with knowledge about STDs ( $p < 0.001$ ).
Cureau <i>et al.</i> , 2014 <sup>(33)</sup>	To evaluate the agglomeration of risk factors and their associations with socio-demographic variables.	Quantitative/descriptive/retrospective/cross-sectional	The combination between unhealthy diets and sedentary lifestyle (OR=1.32, 95% CI: 1.16-1.49) prevailed. The aggregation of risk factors was directly associated with age and inversely associated with socioeconomic status.
Silva <i>et al.</i> , 2014 <sup>(19)</sup>	To investigate gender differences in the grouping of HRBs associated with CNCD in Brazilian adolescents.	Quantitative/descriptive/retrospective/cross-sectional	Non-working adolescents and boys living in urban areas exhibited more HRB (boys: 183 PR=1.37, CI 95%: 1.20; 1.55; girls: PR=1.22; CI 95%:1.10; 1.35). Girls aged 17-19 years old and boys who had mothers with $\geq 12$ years of schooling presented less HRB (PR=0.83, 0.72, 0.95) and (PR=0.79, 0.64, 0.98), respectively.
Dias <i>et al.</i> , 2014 <sup>(34)</sup>	To analyze the prevalence of sedentarism and associated factors in adolescents.	Quantitative/descriptive/cross-sectional/cohort	The variables associated to sedentarism were: age (14 years) (OR=3.51, 95% CI 2.19, 5.60); high socioeconomic level (OR=3.83, 95% CI 2.10, 7.01), higher maternal education level (OR=1.81, 95% CI 1.09, 3.01); living in the country (OR=0.49, 95% CI 0.30, 0.81); the act of trying alcoholic beverages (OR=1.34, 95% CI 1.08, 1.66); and being overweight (OR=1.33, 95% CI 1.06, 1.68).
Abreu <i>et al.</i> , 2011 <sup>(35)</sup>	To estimate the prevalence of smoking among adolescents from Belo Horizonte (MG) and evaluate associated factors.	Quantitative/descriptive/retrospective/cross-sectional	Smoking prevalence was 11.7%, associated with the factors: excessive alcoholic consumption (OR=20.6), age (OR=1.2); having a father who smokes (OR=4.0), or siblings (OR=2.5) or also close friends who are usual smokers (OR=5.2).
Vale <i>et al.</i> , 2011 <sup>(36)</sup>	To estimate the prevalence of eating disorders and to identify risk factors among female adolescents in Fortaleza (CE).	Quantitative/descriptive/retrospective/cross-sectional	The fear of gaining weight was reported by 62%, both by private school students and by public school students ( $p < 0.05$ ), however, predisposition for greater risk was accentuated in the youth from private institutions.
Farias <i>et al.</i> , 2009 <sup>(37)</sup>	To determine the prevalence of HRB and analyze factors associated with exposure in adolescents from the state of Santa Catarina.	Quantitative/descriptive/retrospective/cross-sectional	For every 10 young people, seven (64.7%) were simultaneously exposed to two or more HRB. The identified risk subgroups were: males, aged between 18 and 19 years, living in urban areas, studying at night and with high family income.
Castro <i>et al.</i> , 2008 <sup>(38)</sup>	To present methods and results of the risk factor surveillance system for CNCD among adolescents.	Quantitative/descriptive/retrospective/cross-sectional	Tobacco consumption and a lower rate of physical activity were more present in females.
Peres <i>et al.</i> , 2008 <sup>(39)</sup>	To examine the influence of family structure on HRB among low-income adolescents.	Quantitative/descriptive/retrospective/cross-sectional	The rates of several HRB were lower among adolescents living with both parents and greater among those living with neither of them.
Campos <i>et al.</i> , 2011 <sup>(40)</sup>	To identify the pattern of alcohol consumption among high school students of Passos (MG) and its association with sociodemographic factors.	Quantitative/descriptive/retrospective/cross-sectional	High risk for young boys who work and have problems with their mothers. They described precocity in contact with alcohol and there was a high prevalence of behaviors that represent a risk for alcoholism.
Vieira <i>et al.</i> , 2007 <sup>(41)</sup>	To investigate the relation between age of onset of alcohol use, consumption pattern and related problems.	Quantitative/descriptive/retrospective/cross-sectional	Those who started drinking earlier reported having consumed a higher number of doses per use ( $p = 0.013$ ) and they presented and had more drunken episodes in the last month ( $p = 0.05$ ). Their age when they experimented with alcohol and tobacco use ( $p = 0.017$ ) and other drugs ( $p = 0.047$ ) were associated.
Costa <i>et al.</i> , 2007 <sup>(42)</sup>	To analyze the use of alcoholic beverages, cigarettes, other psychoactive substances and risk factors among adolescents of the schools of a municipality with 500 thousand inhabitants in Bahia.	Quantitative/descriptive/retrospective/cross-sectional	The use of alcohol, tobacco and other substances were significantly higher between 17-19 years and in younger boys. The main reasons were related to the fact they were more curious, proximity to parents and friends, participation in festive celebrations and staying at a friend's house.
Wesselovicz <i>et al.</i> , 2008 <sup>(43)</sup>	To identify the factors associated with the consumption of alcoholic beverages by adolescents of a public school.	Quantitative/descriptive/retrospective/cross-sectional	32.30% of the adolescents admitted that they had become used to drinking alcohol with their family members, and the rest reported that it happened under the influence of friends.

Source: Study data, 2016.

## DISCUSSION

Legal documents from the World Health Organization (WHO) and guidelines of the Ministry of Health were included considering the importance of discussing them from the evidence raised for the HRB among adolescents. It was found that the included studies proposed objectives that sought to describe frequency and factors associated with such behaviors, including social, economic, family and gender factors.

In order to better organize the data, the discussion of the present study follows a thematic grouping according to the CDC definition for the behaviors.

### SEXUAL BEHAVIORS RELATED TO UNINTENDED PREGNANCY AND SEXUALLY TRANSMITTED DISEASES AND ASSOCIATED FACTORS AMONG ADOLESCENTS

Most young people are aware in a coherent manner of the sexual practices that make them vulnerable to STDs and HIV<sup>(28-29)</sup>, however, at the same time there are studies that draw attention to the irregular use of condoms among Brazilian adolescents<sup>(27,29,37)</sup>. Information on HIV/AIDS alone does not guarantee the use of condoms, since despite the knowledge about the repercussions of an unprotected sexual encounter, young people have demonstrated risky and non-protective behaviors<sup>(29)</sup>.

The use of substances such as alcohol and drugs and not having meals together with their parents increases the incidence of unprotected sex<sup>(27)</sup>. The literature shows that the mother's education level<sup>(32)</sup> and that living with both parents<sup>(39)</sup> are presented as protective elements for safe sex. In contrast, a study conducted in Minas Gerais showed that giving great importance to religion is negatively associated with the use of contraceptives in the last reported intercourse<sup>(31)</sup>.

A study carried out in the urban area of São Paulo city shows that the consistent use of condoms is more pronounced among young students of private schools when compared to those of public schools<sup>(32)</sup>. However, in São Paulo there was less frequency of the contraceptive barrier method among young people from the most favored economic classes, which can be explained by their better access to hormonal contraception<sup>(32)</sup>. In Minas Gerais, students' progress throughout the school years reduces adherence to preventive methods: high school students used condoms less frequently, for example, when compared to secondary school students<sup>(31)</sup>. In Imperatriz (Maranhão state), the use of condoms during the first intercourse favored its use throughout the following 6 months. Most adolescents maintain regular condom use if they reported using it in their last sexual intercourse<sup>(28)</sup>.

Studies carried out in Minas Gerais and São Paulo showed that males are more likely to practice safer sex when compared to females<sup>(31-32)</sup>. Among females, there is even more probability of unprotected sex<sup>(26)</sup> which may lead to an inference of their reduced bargaining power with their partners<sup>(32)</sup>, therefore making it necessary to encourage the use of female condoms and make them accessible among young women. Working to reduce gender inequities may have similar effects, considering that homosexual/bisexual adolescents reported using condoms

less frequently (74.2%) than those who referred to themselves as heterosexuals<sup>(25)</sup>. It is inferred that the sexual identity of the individual can be an element of vulnerability to unplanned pregnancy and STD.

In Recife (Pernambuco state), first intercourse before the age of 15, the age of the first gestation before the age of 16, having a sexual partner, not being involved in the child's care and low family income (less than one minimum wage) were factors associated with recurrent episodes of pregnancy in this phase of life<sup>(30)</sup>. Information on safe sex alone is not sufficient to avoid its occurrence and it should be accompanied by easy access to condoms and other contraceptive methods<sup>(32)</sup>. It is essential to make condoms available in schools<sup>(33)</sup>, as well as access to hormonal contraceptives in health centers. Adolescents may not have the financial condition to purchase them in pharmacies and may be fearful of being recognized by other clients<sup>(19)</sup>. The alignment between schools and health services is essential for success in promoting safe sex between adolescents<sup>(19)</sup>.

Information on how to prevent pregnancy and sexually transmitted infections should be disseminated early due to the young age of sexual initiation<sup>(29)</sup>. It can be noticed that a higher number of involved risk factors increase the chances of unprotected sex. We conclude that vulnerabilities in the family, school and economic contexts are associated with unprotected sexual behavior, and a sum of efforts is fundamental in the sense of acting positively on health.

### SMOKING AMONG ADOLESCENTS AND ASSOCIATED FACTORS

The second most commonly used drug among young people in the world and in Brazil is tobacco, representing the leading cause of preventable death, higher than AIDS, accidents on public roads, alcohol consumption, illicit drugs, suicide and homicides all together<sup>(44)</sup>. The earlier one starts smoking, the greater the possibility of becoming an adult user. Most (80%) of those who start using tobacco as young people will continue to do so in adulthood; and one third of these will die prematurely due to substance-related diseases<sup>(45)</sup>.

Smoking among adolescents is multifactorial and dependent on the social, economic and family spheres. The habit was higher among adolescents of more advanced ages<sup>(11,35)</sup>. Taking into consideration that experimentation and the use of tobacco does not occur in early adolescence, it is urgent that prevention and awareness of the harmful effects of smoking occur still in childhood.

Having friends and mothers who are smokers predisposes the adolescent to smoking<sup>(13-14,35)</sup>, emphasizing the importance of the family and social environment in the choices and behaviors made by them. Alcohol consumption is closely related to smoking, with an even greater association among boys<sup>(13,15)</sup>.

We can highlight the strong influence of the environment on tobacco experimentation and use. Adult behavior is adopted in the search for their own identity, and it is important that family members represent positive references in this phase of life<sup>(14)</sup>. Preventing smoking in the early years of adolescence considering the joint sensitization of friends and family is therefore imperative<sup>(11)</sup>.

## ALCOHOLISM AMONG ADOLESCENTS AND ASSOCIATED FACTORS

Alcohol consumption in adolescence was associated with other risk behaviors and health problems such as smoking, use of illicit drugs, unprotected sex, traffic accidents, homicides and suicides<sup>(43)</sup>. A study conducted in Paulínia (São Paulo state) found that the first experience with alcohol occurred before the age of 15 in 78% of cases, and that the earlier the use, the greater the number of doses consumed per event and more episodes of drunkenness were repeated in the last 30 days<sup>(41)</sup>. The high consumption of alcoholic beverages in the last month was also associated with the age of 15 years or more, females, white skin, having a mother with longer schooling, attending private school, trying cigarettes and other substances, regularly consuming tobacco and having had sexual intercourse<sup>(20)</sup>. Although researchers<sup>(20)</sup> found higher alcohol consumption among young girls, studies in Passos (Minas Gerais state) and Feira de Santana (Bahia state) showed significantly higher consumption among boys<sup>(40,42)</sup>.

Among the reasons for adolescents to start using alcohol, we can point out curiosity, being close to parents and friends, participating in festive celebrations and going to friends' houses<sup>(42)</sup>. A study conducted in Maringá (Paraná state) pointed out that circumventing problems related to social interaction may also be one of the causes for the habit of alcohol use among youth<sup>(43)</sup>. In the same study, many parents or guardians are aware that the consumption is real among adolescents, and the habit started with family members for 32.30%, while the others were influenced by friends. Similarly, the absence of a good relationship with the mother and being a worker was also related to a greater risk for such behavior<sup>(40)</sup>.

It is observed that the desire for trying new things in the social environment of adolescents favors drinking alcohol, in which parents and friends are remarkable influences. Alcohol can act as a reducer of adolescent's challenges.

In investigations carried out in Aracaju (Sergipe state)<sup>(19)</sup> and in Barra das Garças (Mato Grosso state)<sup>(46)</sup>, alcohol consumption by adolescents was associated with violent behavior. The impulsivity when not regulated can give rise to psychosocial risk behaviors, mainly with manifestations of violence, in which substances such as alcohol and others act as facilitators.

The literature reports that early exposure to alcohol increases the chances of excessive consumption throughout the course of life<sup>(47)</sup>. Overall, society is permissive when it comes to this consumption, including in the family. This can anticipate risks, aggravate health and confirm dependence among adolescents, which calls for awareness of the effects and repercussions of alcohol consumption in the short, medium and long term.

## PHYSICAL INACTIVITY AMONG ADOLESCENTS AND ASSOCIATED FACTORS

The literature classifies a young person who performs 300 minutes or less of physical exercises per week as insufficiently active, with moderation and vigor during a normal week in the following dimensions: leisure, work occupation, domestic

activity and transportation<sup>(15-18)</sup>. Physical inactivity largely prevailed among Brazilian adolescents; a worrying fact, considering that this habit is one of the precursors of chronic non-communicable diseases (CNCND). Researchers<sup>(16)</sup> affirm that although sedentarism manifests itself in the form of associated diseases in adult life, its occurrence is common among childhood and adolescence.

In Maringá (Paraná state), it was possible to show that adolescents from public institutions and lower socioeconomic levels were less active when compared to others. The likelihood of obese young people being physically inactive is greater when compared to those classified as eutrophic<sup>(17)</sup>. In Pelotas (Rio Grande do Sul state), a more frequent active commute from home to school was associated with low economic level. In Cuiabá (Mato Grosso state), the highest rate of sedentarism was recorded among the youth of higher economic status<sup>(18,34)</sup>. Due to the divergences among the studies, the economic status alone does not predict the levels of physical exercise.

Low adherence of adolescents in Physical Education classes predisposes them to the occurrence of HRB in an aggregated way, and physical activity is positive in the fight against obesity and chronic-degenerative diseases<sup>(15)</sup>. In addition to potentiating the indexes of weekly exercises, these classes are presented as a protection factor for other HRB by encouraging the consumption of fruit and vegetables, and less exposure to television<sup>(15)</sup>.

When compared to boys, girls had lower rates of physical activity<sup>(15,17-18,38)</sup>. Among females, the inactivity is associated to a low consumption of the cited foods. Among boys, it was strongly related to smoking<sup>(15)</sup>. The environment in which we live affects both genders differently, which reveals the need to consider gender issues in encouraging physical activity among young people from individual preferences and abilities.

The development of strategies aimed at increasing physical activity can be favored by curricular designs that aim at and encourage healthy lifestyles.

## UNHEALTHY DIETARY BEHAVIORS AMONG ADOLESCENTS AND ASSOCIATED FACTORS

The review highlights two main forms of unhealthy dietary behavior among adolescents: the first one related to eating disorders (ED) and the second to eating behaviors that leads to weight gain. In relation to the first, the literature refers that eating disorders influence the relationship of each human being with food, by triggering (for example) a series of pathological situations such as self-induced vomiting, pathological food restriction, binge eating and purging<sup>(48)</sup>. There is evidence of an increase in these attitudes, also highlighting the occurrence among boys<sup>(49)</sup>. A study carried out in Salvador (Bahia state) highlighted skin color and gender as important variables for eating disorders among females, yellow or indigenous people<sup>(8)</sup>.

The fear of gaining weight is identified in the literature as a risk factor for eating disorders and it was frequent among adolescents in Ceará<sup>(36)</sup>. In turn, self-image dissatisfaction was the main risk associated with eating disorders among young people from Juiz de Fora (Minas Gerais state)<sup>(9)</sup>. These findings reinforce that a strong appreciation of socially

imposed beauty standards contributes to an increase in the rates of disorders in this stage of life. The social demand from parents and friends is also identified in the literature as a possible stressor related to weight loss and the search for an ideal body<sup>(36)</sup>. It is observed that pubertal transformations can make adolescents even more vulnerable to the perception of their own body. In seeking group acceptance and social affirmation, they adopt group postures or those that bring better representativeness to their peers, which may make them even more vulnerable to deviations of dietary conduct.

In addition to being deleterious to the health of the individual, inappropriate diets are associated with a significant occurrence of physical inactivity, making the problem even more serious<sup>(33)</sup>. A study carried out in Presidente Prudente (São Paulo state) obtained differences among the economic classes regarding dietary behavior. Low economic power favors inappropriate food intake. However, in the higher economic class, maternal schooling and private schooling were associated with being overweight. Parents being overweight was related to that of adolescents, which allows us to see that overweight parents are a strategic element for early decision-making and for health interventions that contemplate a familiar approach<sup>(10)</sup>.

Studying in a private school is associated with eating behaviors predisposed to overweight and obesity. Rethinking how to deal with food outside of school cafeterias, inserted in academic curricula and throughout the entire education of the individual is essential. Other authors also indicate the school as a facilitator for overweight and obesity, especially for those of high economic class with more access to industrialized foods that are often consumed in the school environment<sup>(50)</sup>.

Despite the benefits of regulating the commercialization of food in schools, it is concluded that good food practices must transcend the school environment and reach the reality of families and other spaces of socialization of adolescents. Thus highlighting good eating practices from childhood in social settings contributes to the formation and solidification of healthy eating behaviors.

## VIOLENT BEHAVIOR AMONG ADOLESCENTS AND ASSOCIATED FACTORS

Juvenile violence is particularly worrying as it represents one of the major causes of illness and death among this group. Such violence is especially visible among all, where young people are more predisposed to fatal and non-fatal episodes. Added to this is the fact that in addition to being a victim, they can also be the aggressor, which contributes to the continuity of the violence cycle<sup>(22)</sup>.

Involvement in situations of violence prevailed among boys<sup>(21-22)</sup>. A lack of publications on the reasons that led the boys to become more involved in violent situations when compared to the girls was noticed. This behavior was associated with the consumption of alcohol, cigarettes and drugs for both genders<sup>(19,22,24)</sup>. It is understood that the consumption of drugs, being licit or illicit, is directly related to violent situations and must be prevented.

Studies warn that unsatisfactory relationships with parents favor violent adolescent behavior<sup>(21-22)</sup>. The family

relationship deserves attention and can compromise the psychological, emotional and behavioral development<sup>(21)</sup>. The risk rises in family groups where those responsible are unaware of their children's friendships<sup>(22)</sup>. The family environment should be recognized as a space for dialogue between the adolescent and their peers, and not as a space that is parallel to their universe.

School delays and the socioeconomic level should support prevention of violent behavior through educational actions. The conjunction between being poor, not studying and having low self-esteem reduces adolescents' chances of building self-protection structures and exposes them to revictimization in the extra family environment<sup>(23)</sup>. This relationship is even more evident in adolescents in public schools compared to those in private schools<sup>(22)</sup>.

Young people are exposed to various violent situations in the spaces that should protect them and promote their development with health and safety, namely at school and at home<sup>(21-22)</sup>. When the school territory is dominated by organized crime, it also makes the student's commute from home to school unsafe<sup>(21)</sup>. It can be inferred that the school and the home are spaces marked by violence and urban risk, which contradicts the understanding that they would function as environments of socialization, education, and above all protection of the adolescent.

Finally, in view of the high prevalence of HRB started in adolescence, it is clear there is a diversity of factors related to these diseases. From the implication to professional practice perspective, the HRB approach in an associated way is justified by the importance of a more comprehensive view and based on the premise that risk behavior generally does not happen in isolation, but is associated with others and with the social, economic, family and cultural context in which the adolescent is inserted. A reflection of the multiprofessional teams that embrace the adolescents must begin in the professional training and extends it towards interdisciplinarity that dimensions care from the presented necessities.

## CONCLUSION

This study allowed for identifying risk factors for the health of Brazilian adolescents, as well as the intrinsic relationship between them. Adolescent HRB are diverse, frequent, and prone to clutter, which potentiates the consequences for those who submit to such behaviors. This research also allowed for bringing together regional data in a country of continental dimensions, and for raising a hypothesis on determinants of adolescents' state of health in Brazil. The intersectoral articulation of health, education and other social networks can propitiate sustainability of actions based on the reality experienced by young people.

Other HRBs still lack understanding in conjunction with those defined by the CDC, such as the risk of suicide and depression; behaviors that in considering the possible impacts need to be taken into consideration when analyzing the behavioral scenario of adolescents and young people. We can also point out the scarcity of research investigating the effects of HRBs in the short, medium and long term, which would be of great value in view of the future



consequences in the subsequent stages of the life cycle. Investigations of a longitudinal nature could contribute to deepening the research question.

The adoption of HRB among adolescents is a complex, multifactorial event influenced by the social context.

Considering that the environment influences behavior patterns, health actions must also contemplate the regional specificities and invest in strategies of health and professional training that have the reality of the adolescent as the starting point.

## RESUMO

**Objetivo:** Identificar o conhecimento sobre fatores associados aos comportamentos de risco para a saúde entre adolescentes brasileiros. **Método:** Revisão integrativa da literatura nas bases de dados Cochrane, IBECs, LILACS, MEDLINE e SciELO, em relação aos comportamentos de risco recomendados pelo Centro de Controle e Prevenção de Doenças. **Resultados:** Analisaram-se 37 estudos, com predomínio do comportamento sexual de risco, uso do tabaco e comportamento violento. O avançar da idade favoreceu o sexo desprotegido, o uso do álcool e tabaco. A influência familiar e de amigos relacionou-se com tabagismo e alcoolismo. O sexo masculino envolveu-se mais em situações de violência e o sexo feminino associou-se à inatividade física. Pertencer a classes econômicas mais baixas relacionou-se com sexo desprotegido, inatividade física, comportamento alimentar não saudável e violência. Estudar em escola privada referiu-se ao comportamento alimentar não saudável. **Conclusão:** Comportamentos de risco relacionaram-se a fatores sociais, econômicos e familiares e tendem a se aglomerar.

## DESCRITORES

Adolescente; Saúde do Adolescente; Comportamento do Adolescente; Assunção de Riscos; Enfermagem Pediátrica; Revisão.

## RESUMEN

**Objetivo:** Identificar el conocimiento acerca de los factores asociados con los comportamientos de riesgo sanitario entre adolescentes brasileños. **Método:** Revisión integrativa de la literatura en las bases de datos Cochrane, IBECs, LILACS, MEDLINE y SciELO, con respecto a los comportamientos de riesgo recomendados por el Centro de Control y Prevención de Enfermedades. **Resultados:** Se analizaron 37 estudios, con predomínio del comportamiento sexual de riesgo, tabaquismo y comportamiento violento. El avance de la edad favoreció el sexo desprotegido, el uso de alcohol y tabaco. La influencia familiar y de amigos se relacionó con tabaquismo y alcoholismo. El sexo masculino se involucró más en situaciones de violencia y el sexo femenino se asoció con la inactividad física. Pertenecer a clases económicas más bajas se relacionó con sexo desprotegido, inactividad física, comportamiento alimentario no sano y violencia. Estudiar en escuela privada se refirió al comportamiento alimentario no sano. **Conclusión:** Comportamientos de riesgo se relacionaron con factores sociales, económicos y familiares y tienden a aglomerarse.

## DESCRIPTORES

Adolescente; Salud del Adolescente; Conducta del Adolescente; Asunción de Riesgos; Enfermería Pediátrica; Revisión.

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