*Eloisa da Fonseca Rodrigues*[1]
*Giovana Calcagno Gomes*[2]
*Luciano Garcia Lourenção*[3]
*Aline Campelo Pintanel*[4]
*Simone Quadros Alvarez*[5]
*Adriane Maria Netto de Oliveira*[6]

# Influence of life habits and behaviors on the health of adolescents*

**Theme:** Promotion and prevention.

**Contribution to the subject:** The contribution to the new disciplinary knowledge of this research comes from the fact that, in the process of developing this work, we realized the importance of nursing performance in school spaces to promote and protect the adolescents' health, with actions that address from monitoring of vital signs, and growth and physical development, to health education for disease prevention. Due to their scientific training and expertise, nurses can trigger health education actions in schools, taking specific knowledge from the health area, promoting, together with adolescents, reflections on the self-care process, health concepts, risk behaviors and healthy behaviors.

ABSTRACT

**Objective:** To identify the influence of life habits and behaviors on the health of adolescents. **Materials and method:** This is a quantitative research, with an exploratory and descriptive approach, developed with 124 adolescents, students from a pre-professional school in southernmost Brazil. Data was collected by means of a questionnaire. The analysis was performed using descriptive statistics by means of the SPSS software, version 20.0. **Results:** The high consumption of ultra-processed food in intermediate meals and insufficient sleep hours per night cause risks to the health of adolescents. Practicing physical activities has proved to be a health protection habit. **Conclusions:** The adolescents need to reframe the importance of healthy eating and sleep in their routine. It was observed that there are

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1 ✉ https://orcid.org/0000-0002-5052-4086. Universidade Federal do Rio Grande, Brazil. eloisa.rodrigues@furg.br

2 https://orcid.org/0000-0002-2464-1537. Universidade Federal do Rio Grande, Brazil. giovanacalcagno@furg.br

3 https://orcid.org/0000-0002-1240-4702. Universidade Federal do Rio Grande, Brazil. lucianogarcia@furg.br

4 https://orcid.org/0000-0002-5076-8902. Universidade Federal do Rio Grande, Brazil. acpintanel@furg.br

5 https://orcid.org/0000-0002-0501-7202. Serviço Nacional de Aprendizagem Comercial, Brazil. simone.quadros@senacrs.com.br

6 https://orcid.org/0000-0001-9422-423X. Universidade Federal do Rio Grande, Brazil. adrianemnoliveira@furg.br

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modifiable factors for sleep improvement in quality and quantity, as well as the value and inclusion of *in natura* food in intermediate meals. We believe that the role of nurses in school spaces, giving rise to joint reflections on the process of self-care, health concepts, risky and healthy behaviors, is capable of promoting and protecting the health of adolescents and preventing morbidities in the future.

KEYWORDS (Source: DeCS/MeSH)

Health risk behaviors; health education; adolescent; environment; school nursing

# *Influencia de los hábitos y comportamientos de vida en la salud de los adolescentes**

RESUMEN

**Objetivo:** identificar la influencia de los hábitos de vida y comportamientos de los adolescentes en su salud. **Materiales y método:** investigación cuantitativa, con un enfoque exploratorio y descriptivo, desarrollada con 124 adolescentes, estudiantes de una escuela preuniversitaria en el extremo sur de Brasil. Los datos se recolectaron mediante cuestionario. El análisis se realizó con la utilización de estadísticas descriptivas con el *software* SPSS, versión 20.0. **Resultados:** el alto consumo de alimentos ultraprocesados en las comidas intermedias y la cantidad insuficiente de sueño por noche representan riesgos para la salud de los adolescentes. La realización de actividades físicas resultó ser un hábito de protección de la salud. **Conclusiones:** los adolescentes deben resignificar la importancia de una alimentación saludable y del sueño en su rutina. Se observó que existen factores modificables para que el sueño mejore en calidad y cantidad, igualmente el valor y la inclusión de alimentos *in natura* en las comidas intermedias. Creemos que el papel del enfermero en los espacios escolares tiene que dar lugar a reflexiones conjuntas sobre el proceso de autocuidado, conceptos de salud, comportamientos de riesgo y saludables. Igualmente, promover y proteger la salud de los adolescentes y prevenir las morbilidades en el futuro.

PALABRAS CLAVE (Fuente: DeCS/MeSH)

Conductas de riesgo para la salud; educación en salud; adolescente; ambiente; servicios de enfermería escolar.

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# *Influência de hábitos de vida e comportamentos na saúde de adolescentes**

RESUMO

**Objetivo:** identificar a influência de hábitos de vida e de comportamentos na saúde de adolescentes. **Materiais e método:** trata-se de uma pesquisa de natureza quantitativa, com abordagem exploratória e descritiva, desenvolvida com 124 adolescentes, estudantes de uma escola pré-profissionalizante no extremo sul do Brasil. Foram coletados dados mediante questionário. A análise foi feita com a utilização da estatística descritiva por meio do *software* SPSS, versão 20.0. **Resultados:** o alto consumo de alimentos ultraprocessados nas refeições intermediárias e a quantidade insuficiente de sono por noite causam riscos à saúde dos adolescentes. A realização de atividades físicas mostrou-se como hábito de proteção à saúde. **Conclusões:** os adolescentes precisam ressignificar a importância da alimentação saudável e do sono em sua rotina. Observou-se que existem fatores modificáveis para que o sono melhore em qualidade e quantidade, assim como o valor e inclusão dos alimentos *in natura* nas refeições intermediárias. Acreditamos que a atuação do enfermeiro nos espaços escolares, suscitando reflexões conjuntas sobre o processo de autocuidado, conceitos de saúde, comportamentos de risco e saudáveis, é capaz de promover e proteger a saúde dos adolescentes e prevenir morbidades no futuro.

PALAVRAS-CHAVE (Fonte: DecS/MeSH)

Comportamentos de risco à saúde; educação em saúde; adolescente; meio ambiente; serviços de enfermagem escolar.

* Artigo desenvolvido a partir da tese de doutorado intitulada "Influência do contexto socioambiental para o desenvolvimento de comportamentos de risco à saúde na adolescência", vinculada ao Programa de Pós-Graduação em Enfermagem da Universidade Federal do Rio Grande, Rio Grande do Sul, Brasil.

## Introduction

The adolescence period corresponds to the second decade of life of the individuals, that is, from 10 to 19 years old. It is considered a process of passage from childhood to adulthood, anchored by intense growth and development and great transformations in the biopsychosocial aspects, with physical changes and different social interactions. This phase is also marked by the search for autonomy over decisions, emotions, actions, and by the development of habits and behaviors that can influence the health of both this and future life stages (1).

In the context of adolescence, the individuals suffer social, cultural and environmental influences with exposure to different situations of vulnerability to their health. Risk behaviors such as inappropriate eating habits, physical inactivity and sleep disorders are associated with illness and with decreased life expectancy (1-4). During this period, some health problems can be acquired or aggravated by the adolescent's behavior, compromising their health in the future; therefore, it is considered that adolescence is a critical moment for health interventions (5).

Health risk behaviors, such as unhealthy habits and lifestyle, increase the likelihood of the emergence of noncommunicable diseases (NCDs) usually manifested in adulthood, such as cardiovascular diseases, type 2 diabetes, stroke, and various types of cancer, which are the causes of increased morbidity and mortality in several countries around the world, including the young population (6, 7).

A report issued by the World Health Organization devoted to the health of adolescents around the world estimated that mortality in this population group was 1.2 million individuals due to potentially avoidable causes. It stressed that the conditions and way of life have a serious impact on the health and development of adolescents and devastating effects in adulthood (8).

Adolescents' life habits are produced consciously or unconsciously by the interactions established with the environment, according to their time and to the prevailing and socially accepted culture. The individuals who live and interact with them — family, friends, teachers, colleagues — and the school constitute their exchange and learning environments. In them, shared experiences, either positive or negative, will have repercussions on their choices and inevitably on their health.

In the search for diverse experiences in different contexts, the adolescent feels much more the need for immediate well-being than the concern with the consequences that their choices may have in the long term. Habits, not always very healthy, result from a new way of thinking and acting in the adolescence phase, in the way of playing social roles and in the way of perceiving and being perceived, influenced by significant changes in interactions and in the relationships with their contexts (9).

Adolescents experience physical, biological, social and psychological changes typical of their growth and development process; in this journey, the conditions offered by the social and environmental contexts can influence them to develop behaviors harmful to their health. In this context, it was questioned about the influence of lifestyle habits and behaviors on the health of adolescents. From this perspective, the objective was to identify the influence of life habits and behaviors on the health of adolescents and how understanding this can help to improve health and development indicators in this age group, qualifying the work of nurses with this population segment in school, family and community spaces in general.

## Materials and Method

A research study of a quantitative nature was conducted, with an exploratory and descriptive approach. It had as context a pre-professionalizing school, linked to a federal university in the South of Brazil that serves adolescents in situations of social, economic and environmental vulnerability, especially those from poor communities.

The 124 participating adolescents were between 14 and 17 years of age, a family income up to a 1.5 minimum wage, regularly enrolled and attending public schools in the municipality, regardless of the grade. Adolescents were excluded when there was disagreement between parents and children to participate in the research or when they did not attend school on the days of data collection.

Data collection was carried out during the month of June 2019, on the school premises, in prior agreement with the direction and pedagogical coordination to define dates and times that do not interfere with the progress of school activities. The participants were asked questions that characterize the adolescent's profile and about their eating habits, sleep and physical activities.

The data were typed and stored in a structured database in Excel (Microsoft) and later transferred to the Statistical Package for the Social Sciences (SPSS) software, version 20.0, analyzed by means of descriptive statistics, and presented in the form of tables.

The study obtained a favorable opinion from the Ethics Committee on Research with Human Beings of the Federal University of Rio Grande, under number 130/2019. The ethical precepts for research with human beings were respected according to Resolution 466/2012 of the Brazilian National Health Council (10). The participants were informed about the Free and Informed Consent Term and about the Free and Informed Assent Term sent to their parents and guardians. The anonymity of the participants was guaranteed.

## Results

The research participants were 124 students aged from 14 to 17 years old (mean of 15.5 years old; SD: 1.1 years old). It was observed that 80 adolescents (64.5 %) were female. Elementary school represented the schooling level of 62.9 % of the participants. As for religion, 41.9 % answered that they did not follow any and, of those who answered that they did, Umbanda was the most mentioned with 23.4 %. The household is mostly shared (68.6 %) with three to five people and, when asked about family income, 70 % of the adolescents did not know how to inform it.

### *Food consumption*

For the analysis of food consumption data, the reference of the Food Guide for the Brazilian population (*Guia alimentar para a população brasileira*) was used, which presents the official food guidelines for our population. The adolescents were asked freely about the foods consumed in their meals, which were subsequently grouped according to the *in natura*, processed and ultra-processed categories. In the *in natura* category we find foods directly obtained from plants, such as leaves and fruits; or from animals, such as eggs, milk and meat, purchased for consumption without having undergone any changes after leaving nature. In another category, we grouped processed foods, canned vegetables and meats, fruit jams, cheeses and breads. Among the ultra-processed foods, there are stuffed cookies, packaged snacks, soft drinks, artificial juices, instant noodles, and cold meats (11).

Food consumption was investigated based on the number of meals eaten per day and on preferences regarding food choices for breakfast, lunch and dinner, as well as snacks between main meals. Regarding the number of meals per day, it stood out that 20.2 % do not have breakfast, 2.4 % do not have lunch and 9.7 % do not have dinner. In relation to snacks, 43.5 % eat the largest amount of ultra-processed foods. The data can be verified in Table 1.

**Table 1.** Meals and food consumption of the adolescents

| | N | % |
|---|---|---|
| **Meals/Day** | | |
| One to three | 59 | 47.6 |
| Four or five | 49 | 39.5 |
| More than five | 16 | 12.9 |
| **Breakfast** | | |
| Does not have | 25 | 20.2 |
| In natura | 61 | 49.2 |
| Processed | 26 | 21.0 |
| Ultra-processed | 12 | 9.7 |
| **Lunch** | | |
| Does not have | 3 | 2.4 |
| In natura | 86 | 69.4 |
| Processed | 27 | 21.8 |
| Ultra-processed | 8 | 6.5 |
| **Dinner** | | |
| Does not have | 12 | 9.7 |
| In natura | 73 | 58.9 |
| Processed | 12 | 9.7 |
| Ultra-processed | 27 | 21.8 |
| **Snacks** | | |
| Does not eat | 32 | 25.8 |
| In natura | 25 | 20.2 |
| Processed | 13 | 10.5 |
| Ultra-processed | 54 | 43.5 |
| **Total** | **124** | **100.0** |

Source: Own elaboration.

The adolescents showed fairly similar eating habits. As they study in the opposite shift to the pre-professional course, they receive an afternoon meal at the regular school and lunch at the course school. Both the school afternoon meals and lunches offered are nutritionally balanced. This can explain, for example, the fact that 1/4 of the adolescents do not have breakfast. Among the reasons are the meal not being available at home, the habit of suppressing it or waiting for the afternoon meal in the regular school. We find in snacks the largest problem regarding food choices. Almost half (43.5 %) currently eats ultra-processed foods.

### *Physical activity*

To investigate Physical Activity (PA), we used the "PA practice", "chosen location" and "frequency of practice" variables. The results showed that 58.9 % of them practice some physical activity. For 41.1 % of the adolescents, the school environment is the place for the practice of PAs, while 58.9 % perform them outside the school, on the street or at the gym. Regarding frequency, most of them practices physical activities two or more times a week. The data can be checked in Table 2.

It was observed that most of the adolescents practice physical activities outside the school (58.9 %). Some of them practice weight training and martial arts in gyms; the rest performs outdoor activities in public spaces. The practice of these activities is subject to unforeseen weather and safety conditions. The public administration of the municipality, interested in encouraging PA in the adolescent population, needs to be attentive to the creation and maintenance of public spaces with multi-sport courts that offer safety to the people who frequent them.

The sample of the present study consisted of adolescents who attend regular school. However, only 41.1 % participate in physical education classes. This fact draws the attention, as we know that this is a curricular discipline in elementary and high school, whose objectives include health promotion and, consequently, the preparation of students to remain active. The fact that they are not practicing PA at school leaves a gap in the training of the students. The data can be verified in Table 2.

### *Sleep quality*

Although 59.7 % of the adolescents reported sleeping less than eight hours a day, 55.6 % believe that the quality of their sleep is good. Among the factors that interfere with sleep, they predominantly cited the use of cell phones and computers, followed by insomnia and even studying at night, experiencing nightmares and anxiety, and having to share a room with other family members. The data can be verified in Table 3.

**Table 2.** Physical activity of the adolescents, place and frequency

| | N | % |
|---|---|---|
| Practices physical activity | | |
| Yes | 73 | 58.9 |
| No | 51 | 41.1 |
| Place | | |
| School | 30 | 41.1 |
| Outside the school | 43 | 58.9 |
| Frequency | | |
| 1 time a week | 18 | 24.6 |
| 2 to 3 times a week | 27 | 37.1 |
| More than 3 times a week | 28 | 38.3 |
| Total | 124 | 100 |

Source: Own elaboration.

## Discussion

Most of the adolescents demonstrated to eat adequate food at the main meals. They prefer *in natura* food over processed or ultra-processed foods. This fact corroborates with the findings of the Cardiovascular Risk Study in Adolescents, in which it was concluded that approximately half of the Brazilian adolescents had healthy eating behaviors with regard to meals (12).

It is important to note that adolescence is biologically the phase of the individual's highest growth rate, which implies a need for greater caloric and nutrient input (13). For this reason, it is considered a nutritionally critical life period, making adolescents vulnerable to the consumption of foods rich in energy and poor in nutrients. It is believed that, due to the influence of life contexts, eating habits can be modified and their choices can define the quality of food consumption and its repercussions on health, both in the present and the future.

**Table 3.** Sleep quantity, quality and interference among adolescents

| | N | % |
|---|---|---|
| **Sleep hours** | | |
| Does not know | 1 | 0.8 |
| Less than 8 | 74 | 59.7 |
| 8 hours | 39 | 31.5 |
| More than 8 | 10 | 8.0 |
| **Sleep quality** | | |
| Good | 69 | 55.6 |
| Bad | 55 | 44.4 |
| **Interference in sleep** | | |
| Using cell phone or computer | 50 | 40.3 |
| Insomnia | 8 | 6.4 |
| Studying at night | 6 | 4.8 |
| Nightmares and anxiety | 4 | 3.2 |
| Sharing a room | 4 | 3.2 |
| Waking up too early | 2 | 1.6 |
| **Total** | **124** | **100** |

Source: Own elaboration.

According to the food guide for the Brazilian population, the consumption of ultra-processed foods should be avoided, since industrialization involves several processing techniques and the addition of ingredients such as salt, sugar, oils, fats and chemical substances. So as to make them long-lasting, ultra-processed foods are elaborated with fats that resist oxidation, but which tend to clog the arteries. They are low in fibers essential for the prevention of heart disease, diabetes and various types of cancer. They are foods that offer high energy content and low nutritional value, and the surplus calories ingested and not spent end up stored in the form of fat (11).

Ultra-processed foods are known for their inflammatory potential and their intake is a risk factor for adverse cardiovascular events. Concerned about the adolescents' diet, Spanish researchers analyzed the relationship between the inflammatory index of the diet and the anthropometric parameters of the body composition and blood pressure of 428 adolescents. It was concluded that there is a significant association between the inflammatory index of the diet and cardiovascular risk (14).

Several scientific instruments tested and approved nationally and internationally are used in scientific research studies to evaluate food consumption in adolescents. Some examples are the 24-hour reminder, the three-day food record, and the food frequency questionnaire (15, 16). In this research, we grouped foods, coded and analyzed them by type and meal, which led us to understand the quality of the food, not the quantity consumed.

Most adolescents practice PAs outdoors. However, unforeseen weather and safety conditions need to collaborate for them to be practiced. Evidence suggests that PA is necessary for a healthy life, due to its interrelation with physical, mental and social well-being. Physical inactivity is a modifiable risk factor for chronic non-communicable diseases. The World Health Organization recommends at least 150 minutes a week of moderate intensity PA, such as brisk walking and cycling, or 60 minutes spread over three times a week of moderate to vigorous physical activity, such as soccer and running, for the age group of 5 to 17 years old (17, 18).

Regarding the practice of PAs, there are environmental, physical, socio-cultural, economic and political influences. A number of studies reveal that weather, for example, is an important aspect of the physical environment, where extreme temperatures make it less attractive. Adolescents are most active during the hottest months of the year in the coldest countries. In the socio-cultural environment, represented by the home or school, when parents and colleagues exercise, they influence the practice of PA in the adolescents, because they are potentially susceptible to these people's orientations and stimuli. The safety aspect of the community also interferes with the performance of outdoor activities. In safer neighborhoods, the adolescents practice more activities and a greater variety of sports (19, 20).

In Brazil, physical education classes are guaranteed by law, but there are no specifications regarding the number or duration of classes. Although there are differences according to the region and to the educational system, physical education classes are offered mainly twice a week, and the syllabuses must be based on the content of games, sports, gymnastics and on themes of movement, health, leisure and work (21).

A number of studies prove the benefits of physical education classes on the students' health. Participation in at least 200 minutes every 10 days increases the probability of the students meeting the health criteria for cardiopulmonary fitness, in addition to protecting from overweight and reducing cardiovascular risk, which contributes to the promotion of healthy habits (22).

A research study conducted with adolescents from public schools in Brazil showed that the students who were most active during classes were more likely to meet the health criteria for cardiopulmonary fitness and muscle strength. However, the classes did not protect the students against overweight, obesity or high blood pressure, as they lasted 50 minutes twice a week, which is less than necessary to meet the recommended goal for this age group (23).

As for sleep, most scientists and physicians agree that its ideal duration for adolescents is 8.5 to 9.5 hours per night (24). Fewer sleep hours result in mood and mental health disorders, drowsiness, behavioral problems, use and abuse of psychoactive substances, weight gain, and dysfunction of the immune system. The negative consequences related to school include inattention, absenteeism, school delay, learning and memory difficulties, and poor academic performance (25).

American researchers examined the associations between sleep duration and risk behavior patterns in 41,690 adolescents from public schools. The results showed that those who slept the recommended eight to nine hours were less likely to have risky behaviors compared to those whose sleep duration was short (26).

Changes in sleep behavior can be attributed to two main factors: psychosocial environmental contexts and bioregulatory processes. Impulsive behavior, irritability, negative thoughts and fatigue follow the deterioration of sleep patterns (27). Insufficient sleep is associated with depressive symptoms, anguish and anxiety in individuals without a diagnosis of psychiatric disorders (28). In a literature review, with a sample of 15,364 adolescents who slept less than five hours a night, behaviors such as drunk driving, carrying weapons, attempted suicide, smoking, excessive alcohol consumption, marijuana use, sexual risk, and text messaging while driving were reported (29).

Several factors affect the sleep patterns in adolescents and contribute to insufficient sleep hours, including school start times, use of computers and smartphones at night, and social commitments (30, 31). In recent years, studies have found that the controversial use of smartphones is associated with health risks, ranging from psychosocial disorders such as anxiety, depression and sleep problems to potentially fatal injuries caused by traffic accidents (32). Addiction or dependence on smartphones has become an emerging public health problem. Chinese researchers associated adolescents' dependence on cell phones with poor sleep quality, obesity and hypertension. It was concluded that the use of the smartphone is associated with deprivation and poor quality of sleep, high blood pressure, and risk of cardiovascular diseases in adulthood (33, 34).

An American study carried out with 193 adolescents between 14 and 17 years of age examined the correlation between sleep duration and quality of young people with family aspects. The results identified the potential influence that chaos and family disorganization have on sleep and mental health symptoms in adolescents. Stressful and conflicting family environments impair the quantity and quality of sleep among adolescents (35).

## Final considerations

It was verified that the high consumption of ultra-processed foods in intermediate meals and insufficient sleep hours per night are risky habits and behaviors that can compromise the health of adolescents. It was also verified that practicing PAs regularly is a health protection factor.

For all the individuals, regardless of their age, sleep is fundamental for the full reestablishment of physical and mental functions between one day and another of study and work. The adolescents in this study have many activities in their daily lives; they go to regular school in one shift, in another they take a vocational course and need to study for both activities; they travel with public transportation, which increases the time away from their homes, making the daily journey more tiring. They need to reframe the importance of rest and sleep in their routine. It was observed that there are modifiable factors for improving sleep in terms of quality and quantity, such as the moderate use of cell phones or computers, and that the family can assume an important role in regulating the use of this equipment so that the adolescents can have a more repairing and healthy sleep.

The importance of the nurse's performance in school spaces for the promotion and protection of the adolescents' health is

highlighted, carrying out actions that range from monitoring vital signs and following-up growth and physical development to health education for the prevention of diseases. In view of their scientific training and capacity, nurses can trigger health education actions at school that lead adolescents to specific knowledge in the health area in order to promote reflections together with them on the process of self-care, concepts of health, risk behaviors, and healthy behaviors.

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