

Adolescent health in the Brazilian federal school system: a metasynthesis

Saúde do adolescente na rede federal de ensino brasileira: uma metassíntese

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ABSTRACT The institutions of the federal educational network have their own health team and, therefore, have the possibility of developing multiple strategies for the implementation of School Health Program actions. This study aimed to systematize and synthesize the scientific production developed by workers from the federal educational network on adolescent health in the school environment. This is a qualitative meta-synthesis carried out from searches on the Virtual Health Library, Brazilian Digital Library of Theses and Dissertations, and Google. Content analysis was used for data analysis. The sample consisted of 15 publications and 4 thematic units emerged: pedagogical integration of health education in federal institutes; conception of adolescence and adolescent health in the school environment in federal institutes; perspectives of health work in federal institutes with adolescents; and facilities and difficulties in the development of adolescent health in the school environment in federal institutes. It was found that the scientific production on the subject is still incipient. Even in federal institutes, it is necessary to advance in the methodology of activities and in the topics of health education developed. It is necessary to stimulate youth protagonism, transcending the hygienist and fragmented aspects of school health.

KEYWORDS School health services. Adolescent health. Health promotion.

RESUMO *As instituições da rede federal de ensino possuem equipe de saúde própria e, portanto, têm a possibilidade de desenvolver múltiplas estratégias para a implantação de ações do Programa Saúde na Escola. Este estudo teve por objetivo sistematizar e sintetizar a produção científica desenvolvida por trabalhadores da rede federal de ensino sobre saúde do adolescente no âmbito escolar. Trata-se de uma metassíntese qualitativa realizada a partir de buscas no portal da Biblioteca Virtual em Saúde, da Biblioteca Digital Brasileira de Teses e Dissertações e do Google. A análise de conteúdo foi empregada para análise dos dados. A amostra foi composta por 15 publicações. Assim, quatro unidades temáticas emergiram: integração pedagógica da educação em saúde nos institutos federais; concepção de adolescência e saúde do adolescente no âmbito escolar nos institutos federais; perspectivas do trabalho em saúde nos institutos federais com adolescentes; e facilidades e dificuldades no desenvolvimento da saúde do adolescente no âmbito escolar nos institutos federais. Constatou-se que a produção científica sobre a temática ainda é incipiente. Mesmo em institutos federais, é necessário avançar na metodologia das atividades e nos temas de educação em saúde desenvolvidos. Torna-se necessário estimular o protagonismo juvenil transcendendo os aspectos higienistas e fragmentados da saúde escolar.*

PALAVRAS-CHAVE *Serviços de saúde escolar. Saúde do adolescente. Promoção da saúde.*

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Introduction

In Brazil, School Health (SE) was conceived, starting in the 1850s, anchored in a hygienist logic of inspection and disease control. Over time, it developed itself based on the precepts of the health surveillance model, and is currently regulated by the School Health Program (PSE), which originated in 2007^{1,2}. It stands out for articulating common axes between health and education, fundamentally aiming at promoting health and a culture of peace, contributing to the constitution of conditions for the integral formation of students, favoring the construction of a social care system, with a focus on promoting citizenship and human rights, in addition to strengthening the fight against health vulnerabilities that may compromise full school development, among other aspects³.

Designed within the perspective of health promotion in partnership with the Family Health Strategy, the PSE involves the work of the multidisciplinary team in the Family Health Units of the municipalities, working in partnership with the schools in their territories. It should be noted that the school, in general, presents itself as a place with high permeability to address relevant topics for the Health Promotion (HP) of children, adolescents and young people. Thus, taking advantage of the contact interfaces between health and education allows the targeting of activities aimed at a specific audience, of a certain age group, whose adoption of healthy practices will contribute to the maintenance of good health in adult life.

Although there is the prospect that HP initiatives are part of the school curriculum, specific actions by the health services of the territories within the schools are still observed, addressing issues related to the preventive/biomedical logic. In this scenario, attention is drawn to the development of SE activities within the federal education network, in which student health care services have been established within the school itself with its own and specific health team.

Created in 2008, the Federal Network of Education, Science and Technology currently comprises 38 Federal Institutes of Education, Science and Technology (IF); two Federal Centers for Technological Education (CEFET); 22 Technical Schools linked to Federal Universities, Colégio Pedro II and Universidade Tecnológica do Paraná (UTFPR), totaling more than 600 teaching units distributed throughout the country⁴.

In 2010, with the creation of the National Student Assistance Policy with the objective of contributing to the permanence and success of students in school, the institutions of the Federal Education Network started to have health professionals to work in SE⁵.

The health team of the institutions of the federal network is composed of different professionals, nurses, doctors, dentists, nutritionists, psychologists and social workers. The composition of the multiprofessional health team varies between institutions according to the professionals available in each teaching unit, whose positions are filled through public service exams.

These professionals, integrating the nucleus of the exclusive student assistance of the federal network, have the possibility of developing multiple strategies aimed at the implementation of the PSE. In the meantime, it is highlighted the possibility of mapping the issues of greatest interest to the adolescent community, with the purpose of acting directly by promoting HP actions and prevention of diseases and aggravations in a perennial way within the school, in addition to the direct monitoring of the health of students' for the time they are linked to the institutions, helping to mitigate health vulnerabilities that interfere with learning, success and permanence.

It is considered that, given the social function and national scope of the federal network, knowing the experience of the development of health actions, in these spaces, can provide subsidies for the improvement of the PSE, especially in the context of adolescent health,

given the peculiarities and specific transformations of this phase⁶; above all, considering that the adolescent population corresponds to a significant number of students enrolled in the federal education network. In 2020, the federal network had more than 1 million students enrolled, of which 257,099 belonged to Elementary School II, High School, or Technical Course Integrated to High School, according to data from the Nilo Peçanha platform⁷.

Considering the potential of the health work developed within the federal network, it becomes fruitful to carry out a meta-synthesis of the qualitative productions developed by health professionals in the last 14 years, bringing to the surface its significant potential for contributions to the area of adolescent health at the SE interface, contributing to the sedimentation of the scientific production on the subject, developed in this scope, allowing its applicability in other educational institutions and bringing visibility to the health work developed within the federal education network in Brazil.

This work aims to answer the following question: what does the qualitative scientific production produced by health professionals reveal about adolescent health in the school environment in the Federal Network of Education, Science and Technology?

In this way, it is intended to systematize and synthesize the scientific production developed by workers from the federal education network on the topic of adolescent health in the school environment.

Material and methods

This is a qualitative meta-synthesis, which was developed by a team of six researchers, authors of this article, health professionals involved with the SE theme, four of them working directly in adolescent SE in the federal education network.

The metasynthesis was developed following five steps: 1) data selection; 2) description of the phenomena; 3) data integration; 4) analysis of primary data; and 5) new interpretations.

The first two stages of metasynthesis were established from the elaboration of the research protocol that was registered and published in the Open Science Framework platform (DOI: 10.17605/OSF.IO/AUQGT).

After the elaboration of the protocol was completed, searches were carried out in Brazilian databases and in the gray literature to identify relevant materials to answer the research question. The main search portal chosen was the Virtual Health Library (VHL), which integrates Latin American databases with qualitative peer-reviewed studies, relevant to finding the evidence sought, such as Latin American and Caribbean Literature on Health Sciences (LILACS), the Nursing Database (BDENF), the Virtual Library on Adolescent Health (ADOLEC) and others, which make it possible to find studies on SE in the federal education network in Brazil in Portuguese, English or Spanish. The combination of descriptors used is shown in *tables 1 and 2*.

Table 1. Use of descriptors integrating adolescent health, health in the school environment and federal institutes

Intersection	Adolescent Health	("adolescent health services" OR "serviços de saúde do adolescente" OR "serviços de saúde para adolescentes" OR "assistência estudantil") AND
	Health in the School Environment	("school health services" OR "serviços de saúde escolar" OR "promoção da saúde dos alunos" OR "promoção da saúde dos estudantes" OR "promoção da saúde em ambiente escolar" OR "promoção da saúde em meio escolar" OR "promoção da saúde escolar" OR "promoção da saúde na escola" OR "promoção da saúde no ambiente escolar" OR "promoção da saúde no meio escolar" OR "serviço de saúde baseados na escola") AND
	Federal Institutes	("institutos federais" OR "instituto federal" OR "instituto federal de educação, ciência e tecnologia" OR "rede federal de ensino")

Source: Self elaborated.

Table 2. Use of descriptors integrating health in the school environment, student assistance and federal institutes

Intersection	Health in the School Environment	("school health services" OR "serviços de saúde escolar" OR "promoção da saúde dos alunos" OR "promoção da saúde dos estudantes" OR "promoção da saúde em ambiente escolar" OR "promoção da saúde em meio escolar" OR "promoção da saúde escolar" OR "promoção da saúde na escola" OR "promoção da saúde no ambiente escolar" OR "promoção da saúde no meio escolar" OR "serviço de saúde baseados na escola") AND
	Student Assistance	("assistência estudantil") AND
	Federal Institutes	("institutos federais" OR "instituto federal" OR "instituto federal de educação, ciência e tecnologia" OR "rede federal de ensino")

Source: Self elaborated.

To complement the findings, the search terms were adapted to search for gray literature productions, encompassing the four main terms of this research: "school health", "adolescent health", "student assistance" and "federal institute". These summarized main descriptors were used to search the Brazilian Digital Library of Theses and Dissertations (BDTD) and Google®.

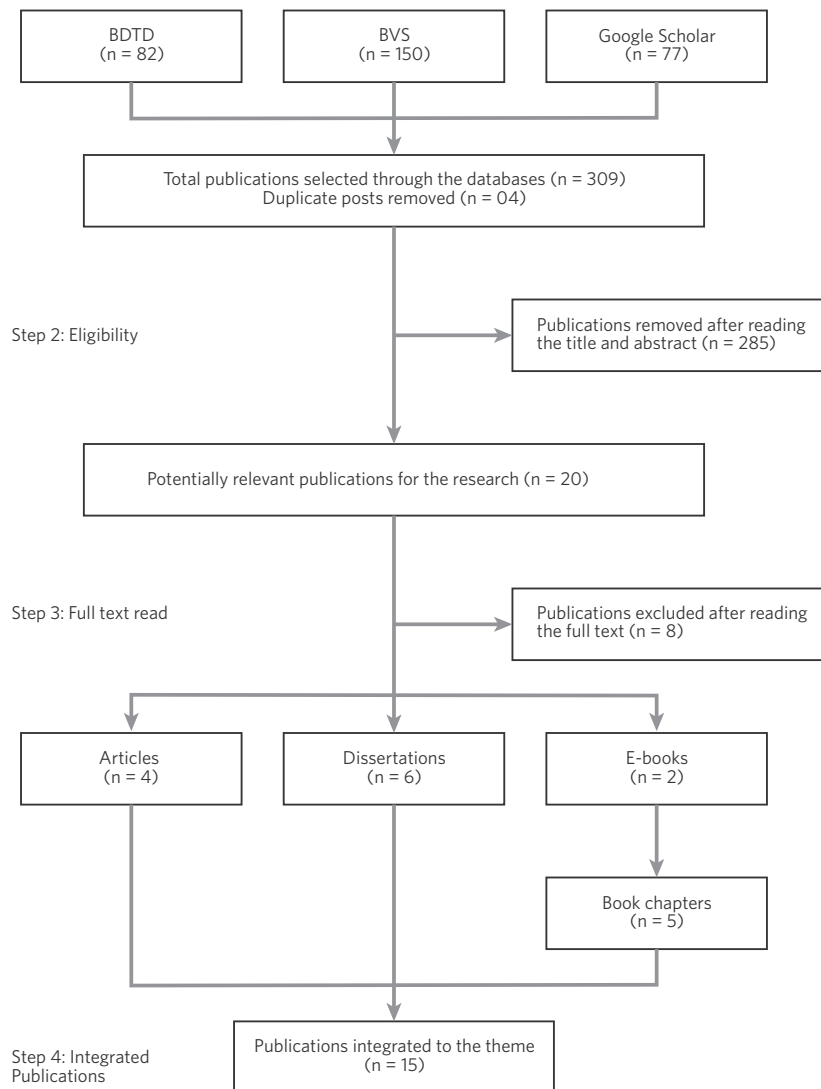
Studies published between January 2009 (month following the creation of the federal education network) and January 2022, in selected Latin American databases, were included, considering the interest in the Brazilian reality, in peer review, in qualitative methodology and in the theme: adolescent health in the school environment within the federal education network. Publications from the gray literature, that comprised dissertations from *stricto sensu* graduate

courses and book chapters published in titles on adolescent health, school health or student assistance were also included. Protocols, comments, technical notes and therapeutic guidelines were excluded from the metasynthesis.

The selection of material included in the review was carried out in three main steps after the search for studies: selection by title, selection by abstract and selection after reading the material in full. At all stages of selection, the group of researchers discussed the inclusions and exclusions made. In case of doubt, a researcher could be requested to make the final decision.

The searches performed returned 305 publications; and, after removing the duplicates, the material was selected according to *figure 1*, including 15 publications (4 articles, 6 dissertations, 5 book chapters).

Figure 1. Publication selection flowchart



Source: Self-elaborated.

In the last step, the material that had a compatible methodology was submitted to quality assessment using the Consolidated Criteria for Reporting Qualitative Research (Coreq) checklist. The quality assessment was performed independently by 4 authors, being selected 14 strategic items of relevance within the Coreq (items 7, 9-12, 14, 16, 17, 25, 26, 29-32). If necessary, discrepancies between authors would be submitted to a fifth review by a senior researcher.

For the analysis of the material, the content analysis of Bardin⁸ was used, following the steps of pre-analysis, exploration of the material and treatment of the results. The categories found in the material exploration phase were defined in group meetings between the researchers. The interpretation of the results was conceived in a reflexive and critical way, based on the experience of the researchers in the work in adolescent health within the federal network.

The production of the data synthesis was based on the data extraction form built with the support of Excel®, in which the researchers entered information related to the publication, including the authors' profession, institutional affiliation, place of study and information about sample and study results.

As this is a type of review, submission to a Research Ethics Committee was waived; however, all ethical and authorial aspects were respected. This research received no funding of any kind.

Results

After selecting the content, we reached the amount of 15 publications (4 articles, 6 dissertations, 5 book chapters). Most authors were linked to the IF, they were technical-administrative personnel (22), with the largest professional category being nurses (6), followed by professors (4) in the areas of physical education (2), biology (1) and languages (1). Also noteworthy is the participation of 4 students in the production of 2 studies. As for gender, there was a predominance of female authors (36) as opposed to male authors (7).

Most publications were carried out from IFs located in the Northeast region (7), with a smaller number of studies carried out in the North (1) and Central-West regions (no records). Most studies were published in dissertation format, and only one dissertation was found to have a related article published. As for the methodological designs of the included studies, 14 were qualitative studies, and 1 was a qualitative-quantitative study. There is a

high number of experience reports (7), which limits the application of the Coreq quality checklist, so that the checklist was applied only to products from field research. In studies in which the quality checklist was applied, a medium to low score ranging from 14 to 24 was observed.

As for the research participants, there is a greater number of studies aimed at the student public, with some studies approaching students, but without quantifying them, indicating the approach of the study in number of classes or groups per grade of High School. At least five studies include the category of professionals (149), ranging from technical-administrative staff directly involved in student assistance to teaching staff linked to teaching.

Based on the content analysis of the productions, it was possible to compose four thematic units: 1) pedagogical integration of health education in federal institutes, which addresses the relevance of incorporating adolescent health themes into the curriculum of subjects; 2) conception of adolescence and adolescent health in federal institutes, which highlights how these two concepts are understood by professionals and assisted adolescents; 3) perspectives of health work with adolescents in federal institutes, which discusses how the understanding of the concepts of adolescence and adolescent health operate in care practice; and, finally, 4) facilities and difficulties in the development of adolescent health in the school environment in federal institutes, which presents the challenges involved in the implementation of actions in the field of adolescent health in federal educational institutions.

Table 3. Summary of results

Nº	Author/year	Type of publication	Title	Category of authors (respectively)	Location of the research	Target Audience/ Participants	Coreq Score (total: 32)	Identified thematic units
1	Ancini DMB, 2017 ⁹	Dissertation	Implantação de ações de educação em saúde no Instituto Federal Farroupilha <i>campus</i> Alegrete integradas ao Programa Saúde na Escola	Physician	IF Farroupilha <i>campus</i> Alegrete (IFFar)	80 high school students and 31 teachers	22	1. It presents a discussion about the integrated curriculum from the point of view of the teachers; 3. It discusses the need to integrate teaching/education in health at the IF based on the teaching interest and support of the institute's health sector.
2	Brolini G, 2014 ¹⁰	Dissertation	Educação em saúde no contexto da assistência ao estudante no Instituto Federal de Educação, Ciência e Tecnologia de Roraima	Nurse	IF Roraima (IFRR)	10 health professionals who work in the IFRR Student Assistance Coordination.	22	1. It problematizes the vision of health education in the school environment disaggregated from curricular teaching; 2. Indicates a plastered view of student assistance professionals, pointing out the adolescent public as a liability in health education activities; 3. Discusses the strategies adopted for health education activities, linked to the idea of knowledge transmission.
3	Faial LCM, 2015 ¹¹	Dissertation	Percepções do aluno adolescente sobre a Saúde na Escola: uma perspectiva Merleau-pontiana	Physician	IF Fluminense (IFF), <i>campus</i> Bom Jesus do Itabapoana	34 students	23	. It presents health in the school environment from the point of view of adolescents; 3. It works on the perspective of the construction of the teenager's proposal for his/her story.
4	Alves LMS, 2015 ¹²	Dissertation	Educação Permanente sobre Infecção Sexualmente Transmissível no Instituto Federal Fluminense	Nurse	IF Fluminense (IFF) <i>campus</i> Guarus	81 students and 17 civil servants	24	3. Points out the unpreparedness of education professionals for the development of health actions on sexually transmitted infections; 4. Emphasizes the importance of dialogue for establishing bonds with adolescents and promoting lifestyle changes.
5	Bezerra GLSP, 2020 ¹³	Dissertation	Alimentação saudável e comportamento alimentar: sentidos e significados para adolescentes escolares	Nutricionist	IF Piauí (IFPI)	13 students	24	1. Emphasizes the need to encourage interdisciplinarity with teachers and pedagogical coordination for the insertion of transversal themes in the curriculum; 3. Development of strategies that lead to criticism, reflection
6	Souza FLR, 2020 ¹⁴	Dissertation	Estratégias de práticas de educação em saúde para a formação integral de discentes dos cursos técnicos integrados do Instituto Federal Farroupilha <i>campus</i> Jaguari	Dentist	IF Farroupilha (IFFar) <i>campus</i> Jaguari	35 integrated high school students and 16 IFRS civil servants (teachers and student assistance professionals)	23	3. Evaluation of health education actions in relation to the impact on omnilateral training, permanence and student success; 4. It provided knowledge about the perceptions and expectations of the academic community in relation to the health service.

Table 3. (cont.)

Nº	Author/year	Type of publication	Title	Category of authors (respectively)	Location of the research	Target Audience/ Participants	Coreq Score (total: 32)	Identified thematic units
7	Ferreira LS e Borba JS, 2021 ¹⁵	Article	A transversalidade da diversidade de gênero e sexualidade na educação em saúde: relato de um projeto de extensão	Professor in the area of languages at IF and administrative agent at another institution.	IF Rio Grande do Sul (IFRS)	Teenage students in 16 high school classes	N/A experience report	2. Presents the work on the theme of gender in a participatory/active perspective of adolescents; 4. Points out challenges related to the implementation of the action plan.
8	Barreto Filho EM, Valente GSC, 2017 ¹⁶	Article	Obesidade na adolescência: A interdisciplinaridade como estratégia de Promoção da Saúde	Professor of the Physical Education area. IF and nurse	Instituto Federal Fluminense campus Centro	11 physical education teachers	14	3. Highlights the relevance of interdisciplinary work for the adoption of preventive health practices at school.
9	Faial LCM, Silva RM-CRA, Pereira ER et al., 2019 ¹⁷	Article	A saúde na escola: percepções do ser adolescente	Physician, Nurse and psychologist from other institutions, professor in the area of physical education at IF	Instituto Federal Fluminense	90 students	23	2. They present the school environment from the perspective of the subjects; and the adolescent as a participant who proposes from his/her experience; 3. Indicates the need to break the perspective of health work with adolescents linked to hygienist practices.
10	Costa GOP, Sousa IDB, Ferreira RSAI et al., 2021 ¹⁸	Article	Conversando sobre higiene com adolescentes escolares: um relato de experiência	Nurse at IFMA, other authors linked to other institutions	Instituto Federal do Maranhão (IFMA)	High-school students	N/A experience report	4. Reports the experience of educational activity on the topic of hygiene and the need for guidance to new students.
11	Farias EJJ, Araújo GMS, Oliveira RMA, 2020 ¹⁹	Book Chapter	A adolescência na perspectiva de quem cuida	Psychologist, dentist and social worker	IF Rio Grande do Norte (IFRN)	03 health professionals working in student assistance	N/A experience report	2. They present brief reflections on being a teenager; 3. They centrally address the experience of health care for the adolescent public within the IF, considering their training and care practice.
12	Carvalho EL, Barreto J, Rodrigues D, 2021 ²⁰	Book Chapter	O desenvolvimento da extensão como estratégia de promoção à saúde no espaço escolar	Nurse and scholarship students of the extension project	IF Baiano	Project 1 - 48 servers and employees, 81 students and 93 people from the external community. Project 2 - 743 adolescents (443 - internal and 300 - external audience). Project 3 - 100 students, 407 family members and 13 employees.	N/A experience report	3. They present strategies to approach health education that value the role of the adolescent public and stimulate creativity; 4. It presents the experience of carrying out three extension projects, emphasizing the benefits and limitations encountered along the way.

Table. (cont.)

Nº	Author/year	Type of publication	Title	Category of authors (respectively)	Location of the research	Target Audience/ Participants	Coreq Score (total: 32)	Identified thematic units
13	Sakai CP, 2021 ²¹	Book Chapter	Assistência Estudantil durante a Pandemia do Covid-19: Fortalecimento de vínculos e suporte psicossocial	Psychologist	IF Baiano	All classes of the two higher level courses, 4 of Subsequent Technical level and 1 of Integrated Medium level	N/A experience report	3. Presents a strategy to approach health education from a critical-reflexive perspective; 4. It addresses the experience of a project carried out at the IF in the context of a pandemic, highlighting the positive points and the difficulties encountered.
14	Santos MO, Oliveira MMN, 2021 ²²	Book Chapter	Assistência estudantil como estratégia para permanência de estudantes adolescentes grávidas no IF baiano campus Valença	Dentist and social worker	IF Baiano	Pregnant teenagers from the 2019 integrated high school classes. Who sought the Local Commission for Student Assistance (Clae) or the Valença Campus Social Service	N/A Case study	2. It demonstrates how understanding the health aspects of pregnant adolescent students by the school is a fundamental strategy for permanence and success; 3. The implementation of student assistance in federal educational institutes, aims to implement actions that promote the quality of life of the student as a whole; 4. Emphasizes that a broad, effective and integrated Student Assistance Policy can guarantee permanence and success.
15	Oliveira AB, Schramm GO, Oliveira JR et al., 2021 ²³	Book Chapter	Sexualidade em sala de aula: um olhar a partir da integração de saberes	Biology professor at IF, psychologist, nurse, high school student, high school student	IF Baiano	Students enrolled in the first year of technical courses integrated into high school, aged between 13 and 15 years old	N/A experience report	2. It promotes reflections on the theme of health promotion, a space for protagonism both in the construction of knowledge and in the formation of a conscious and critical individual; 3. Collaborates to bring students closer to the health service and expand the understanding of the role of these professionals in the school context; 4. Presents a teaching-health linkage strategy.

Source: Self elaborated.

Discussion

The fact that the nursing category was more representative in the authorship of publications may indicate a greater link between the area and the study of adolescent health within the school environment. When observing the link between professors, there is a greater participation of professors from subjects closer

to the health area, such as biology and physical education. In addition, the participation of students in the production of two studies demonstrates the consideration of the awareness of the adolescent public by their peers, encompassing the active role of the student during health education activities, but still in few studies.

The types of publications found also reiterate the potential that the topic of adolescent

health in the school environment has as a field of research. However, the low conversion in publications (dissertations and book chapters) in the scientific article format limits the dissemination of the findings made by the researchers. A significant number of productions in experience report format shows that investment in research in this area is still incipient or little stimulated, still in IF, in which there are exclusive teams to develop work related to adolescent health in the school environment.

Geographical inequalities in the production of research on adolescent health in the federal education network, in turn, may reflect not only the stimulus generated by institutions in the development of studies in this area, but also the availability of openings in research notices for the technical-administrative category and the opening for publications in the area of health/student assistance. It may also be a reflection of institutional policies for the absence of civil servants for *stricto sensu* post-graduate studies, which may limit or enhance the development of research on adolescent health in the school environment.

These questions are points of reference for further theoretical deepening and investment in research within the area of adolescent health in the school environment, with emphasis on the federal education network that has specific services and foster devices.

Regarding the systematized categories, the main findings are presented below.

Pedagogical integration of health education in federal institutes

Education in SE represents a strategic opportunity for HP and prevention of risks and injuries. In most schools, the curriculum does not include this topic as part of the pedagogical project of the courses offered. When the topic is addressed by teachers, they usually touch on a superficial level as part of a specific subject in the basic curriculum. Some institutions that have health professionals present in the workforce usually develop health promotion

activities in an extracurricular way, seeking adherence strategies using various pedagogical tools¹³.

In the study carried out by Bezerra¹³, it was highlighted that student assistance professionals have doubts about the implementation of the integrated curriculum proposal. Based on the participants' responses, it was observed that they do not perceive interdisciplinarity being prioritized or worked directly with the integrated curriculum, that the concepts and actions for some subjects are still worked independently and without dialogue with the integrated curriculum. This study also highlights, in the speech of professionals, that the health practices developed by them lack space in the institution, both for their execution in an integrated way with other public-servants and for their involvement in school contents.

Differing from this, some professors believe that the proposal is present in the integrated curriculum, due to the presence of health issues in transversal themes and the provision in the legal documents of the courses. The students interviewed in this study, on the other hand, have a splitted opinion: half understand the SE actions as part of curricular activities, and the other part as extracurricular activities, only as occasional health actions¹³.

Souza¹⁴ highlights that working on the integrated curriculum requires effort and commitment from the people involved. There is a need to link with the proposal. Santos and Oliveira²² highlight the importance of student assistance as a social right, in federal public institutions, and HP actions as a broad, effective strategy that values the integrality of the subject. In addition to offering psychosocial, pedagogical and health support, they help students to remain and succeed in the integrated courses offered, even when affected by health vulnerabilities.

These actions, in addition to bringing students closer to the health service, collaborate to expand and understand the role of professionals involved in the school context. By developing these activities at school in a

participatory way, adolescents are provided with a space for protagonism both in the construction of knowledge and in the formation of a conscious and critical individual. Thus, an action that allows collaborating for the emancipation of health care and autonomy of individuals is highlighted²².

Corroborating this idea, Oliveira et al.²³ emphasize that, when effectively applied, the health promotion intervention fulfills its objective through the construction of knowledge centered on interactivity, in a climate of mutual respect and affection. It also provokes reflections on broad and complex themes, which really contribute to the formation of the individual, without ending the discussion or covering all its aspects, but meaning something for the teenager, in addition to information.

Bezerra¹³ argues that, when analyzing the Pedagogical Project of High School Technical Courses (PPC), the topic of health education and healthy eating is approached tangentially in some subjects that had a related theme. It suggests the need to qualify teachers so that they can act in health promotion actions, as well as train them to address content on this topic that is not always correlated to their area of training.

Although some themes related to education in SE are not yet part of the school curriculum of educational institutions, including federal institutions, it is essential to encourage interdisciplinarity with teachers and pedagogical coordination for the insertion of transversal themes in the Political-Pedagogical Project (PPP) of the institutions' courses¹³.

Conception of adolescence and adolescent health in federal institutes

Studies indicate that there are different conceptions about what it means to be an adolescent and what is involved in caring for the health of adolescents. Broolini¹⁰, in his study with professionals linked to student assistance, found that there is a need to guide

professionals who work in the area, observing that many linked the health education actions promoted to adolescents as a passive entity, opting for teaching-learning methodologies focused on the transmission of information.

The students, in turn, in discussions about adolescence, demonstrated the difficulty of reconciling the condition of being a teenager-patient and health in the school environment. They expressed the importance of the health services model within the IF. They demonstrated feelings of trust provided by the service, whether in the reception or in the follow-up, considering the characteristic changes of the adolescence phase. In parallel to this, they also showed concern about the precarious conditions of hygiene in the environment, low nutritional quality of school meals and possible health impacts¹¹. Thus, they demonstrated an ambiguous position within the school space: while they feel cared for by the services offered (position of patients), they actively reflect on the environmental health conditions offered to them in public education.

From this perspective, it is beneficial to understand the students' impressions about the health service developed within the IF in order to equip professionals in the construction of a work proposal with an emphasis on health protection, prevention and promotion. The studies developed by Faial¹¹ and by Faial et al.¹⁷, when bringing the perspective of the adolescent student public, observed the need for improvements in health services to provide humanized assistance: attending to the institution's three operating shifts; expand the team of professionals; carry out interdisciplinary actions, with emphasis on mental health; adopt pedagogical practices in health. Such adjustments involve the need to provide inputs and adequate infrastructure for the practice of SE and professional training.

Health education, humanized care and the participation of the school community and society are the foundations for boosting SE. Furthermore, the contribution of health lies in the capacity for integrated and articulated

action, of a critical and reflective nature, educating adolescents for the characteristic challenges of this phase^{11,17}. Nevertheless, the exercise of an ES linked to hygienist practices and the biomedical assistance model is still observed, strengthening the fragmentation of individuals, opposing the ideal of comprehensive health care.

In this sense, it is important to highlight the importance that SE practices, within the IF or not, must assume the main role of the adolescent in his health¹⁷. To this end, it is necessary to formulate and implement training projects that promote the improvement of educational practices aimed at health education for professionals working in the area of student assistance, especially with regard to thematic diversity and the curriculum integration¹⁰.

Perspectives of health work with adolescents in federal institutes

The way in which professionals work in health education aimed at the adolescent public is related to their professional training. With regard to health professionals who work in student health (within student assistance services), most of them do not have specific training in SE and are selected from public tenders that require generalist training.

In the reflection carried out by Faria, Araújo and Oliveira¹⁹, the professionals describe that training to work with adolescents was a blind spot in their technical training. This required the development of their own strategies and the completion of the study autonomously to deal with a heterogeneous population and with well-defined individual/group particularities. In this sense, they put the starting point for the transposition of these formative gaps: welcoming, active listening and collateral in relations with the adolescent public; the skills that can be learned with the adolescent public during the consultations carried out within the health services of federal institutions.

This aspect also slips in the teachers category. In the IF, not only the propaedeutic

subjects but also the technical subjects are part of the high school curriculum, and this has a positive impact on the potential for the integration of SE to the high school curriculum due to the thematic diversity of the subjects. Ancini⁹ highlights that there is interest on the part of professors in contributing to an integrated curriculum that favors integral human formation and that addresses health issues, but recognizes that there is a need for support from the health technical staff in addressing some themes, as there was an expression of interest only in some specific areas (biology, chemistry, mathematics, veterinary medicine and physical education).

Barreto Filho and Valente¹⁶ present similar results in their study on interdisciplinary work and obesity prevention at school. The research carried out with physical education teachers finds that, despite recognizing the relevance of the discipline as an ally in the prevention of obesity, teachers in the area do not direct their educational practice towards this preventive application, pointing out that they did not feel supported for the development of interdisciplinary practices.

The displacement of the school from a space of academic/technical training only to a space of instrumentalization for life choices, comprehensive training and protection of the adolescent public involves the need to overcome fixed conceptions about adolescent health; demanding, also, a work management that privileges creativity in its execution, detaching itself from fixed ideas of knowledge transmission and learning hierarchy deriving from banking education and the training limitations of professionals¹⁰.

This also permeates the need to break with the hygienist character linked to work in ES²¹, either by choosing the topics discussed, or by the assistance provided within the services in IF, which reflect the biomedical model^{11,17,23}, as well as the need to establish partnerships that articulate teaching, pedagogical practice and adolescent health care^{9,16}.

Facilities and difficulties in the development of adolescent health in the school environment in federal institutes

SE actions have faced, for their implementation, multiple weaknesses and challenges throughout history². Such challenges permeate the conceptions of practices, still of a strong hygienist character, the predominance of biomedical approaches and the fragmentation of actions.

Within the scope of the federal network, studies corroborate this perspective, showing strengths and weaknesses during the development of SE actions. In this sense, the experience reports included in this study indicate that the challenges result from the high curricular workload of students and the deficiencies of financial and material resources to carry out the activities. The reduced time for activities and the fragility in the integration between health and education hamper the development of intersectoral actions^{15,20,24}.

Sakai²¹ is in line with this understanding and highlights the challenge of building a critical and meaningful health education, by establishing a service that listens to students during the COVID-19 pandemic and has variable adherence among the students themselves. Thus, Oliveira et al.²³ emphasize that health actions should enable students to play a leading role in the construction of knowledge and critical, conscious and reflective training. Furthermore, they argue that, in SE actions, interdisciplinarity, the integration of knowledge and the playful and participatory methodology are tools that collaborate to promote self-care in adolescence.

Despite the weaknesses to be overcome, the studies reveal positive perspectives. Santos and Oliveira²² show a beneficial association between student assistance actions, including health interventions, and the permanence of pregnant adolescent students in school, which contradicts the statistics related to teenage pregnancy and school dropout. While Costa

et al.¹⁸, in their work on the topic of hygiene with incoming adolescent students, also indicate the relevance of approaching the theme to contribute to the prevention of diseases and promotion of the integration of adolescents. Therefore, the potency of the actions can be seen, with beneficial repercussions on the health of adolescents in the school environment.

The productions converge on the need to encourage the use of participatory methodology as a guide to actions. It is inferred, therefore, that the experience reports produced in the context of the federal network reveal possible paths: dialogue and reflection, transcending the simple transmission of information.

Contrary to other findings, which signaled the inexistence of collective planning of health actions, limiting them to isolated and disjointed initiatives²⁴, studies point to the planning of actions to be carried out by multiprofessional health teams in the IF, but still restricted to these professionals, with low articulation with the integrated curriculum and with teachers.

Thus, in spite of difficulties, the potential of the actions is significant, requiring the engagement of professionals and managers in order to make health activities viable (in the financial, structural and training areas), and thus favoring autonomy and integral formation, placing the adolescent at the center of the health care process. In this context, it is relevant to broadly strengthen health actions, to the detriment of specific, fragmented actions with a hygienist profile, valuing subjects as transformers of their reality and their sociocultural context.

Study summary

The thematic units present the way in which the exercise of health is carried out in the IF. Overcoming predominantly hygienist molds, historical parts of the SE, presents itself as its structural challenge. Achieving a work focused on HP in the school environment is in line with the paradigm shift proposed in the PSE and which is more in tune with the

perspectives brought by the Unified Health System², promoting integrality and citizenship in health care.

In the IF scenario, with the presence of the health team in the institutes themselves, it is expected that some alignments can be better carried out, given the greater possibility of integration between the health team and the school environment. It is observed, however, that this proposal of adolescent health as an intertwined curricular axis, overcoming the merely biological view of adolescence and adolescent health, assuming an integral and integrated health perspective and assimilating the issues that cross the school environment, still encounters obstacles.

Clearly, there are efforts aimed at the adoption of health practices that value curricular integration and the protagonism of the adolescent public, but, even in these spaces, there are still difficulties in implementing an agenda of curricular decisions and situated practices, with collective decisions that add adolescents as active agents in the processes. The thematic units found in this study demonstrate that seeking a health practice at school focused on PS is challenging, especially in relation to operationalization, the formation of a collective agenda and the mobilization of different actors for this practice²⁵.

In this way, the searches reinforce the importance of integration and collective work between faculty, health professionals and students to carry out actions that develop health in these spaces, understanding students as an integral and participatory part of this process, in order to achieve the integrality of these subjects. It is important for health education to reinforce its own concept by producing critical reflections on social determinants, contexts of violence, situations of risk and contagion, the search for well-being, sexual and reproductive rights, among other topics.

The construction of spaces that provide health, with guarantees of hygiene, food and leisure is also reinforced. Adolescents' HP at school constitutes an instrument for the

construction of broader debates that also integrate other domains of daily life: mental health, family life, combating violence, labor market perspectives, social mobility, participation in public and political life; fundamental for the development and emancipation of adolescents within a conscious and citizen education.

As a limitation of this study, the pulverizing of the themes dealt with in the publications is presented, leaving little room for other meanings and explanations on each theme to gain importance.

Conclusions

From the analysis of qualitative studies on adolescent health in the school environment, developed within the IF, it is observed that, despite having its own health teams, it is necessary to strengthen and encourage youth protagonism. Pointed out as desirable, in the studies, perhaps, the leading role fades in the realization of a vision of health linked to hygienist practices and in the exercise of health education through the transmission of knowledge.

It is evident the need to invest in training curricula that understand the health issues added to teaching within the school, as well as the professional training of technical health personnel and teachers, who work in the IF and who effectively demonstrate little experience in the development of pedagogical practices aimed at teenagers.

The workload of disciplines, the investment in interdisciplinarity and the engagement of SE themes in the IF are still difficulties. There is a need to develop empirical studies on the contributions of health education within the context of technical and technological training and its relationship with encouraging the adoption of a healthy lifestyle, autonomy to exercise their health rights, individual and collective emancipation and the development of citizenship – and in the deepening of health issues focused on mental health,

for adolescents with specific needs and those in serious social vulnerability, especially in contexts of racial and gender violence.

Collaborators

Carvalho EL (0000-0002-1145-9306)* contributed to the conception and design of the research, data collection, data analysis and interpretation, writing of the manuscript, critical review of the text, final approval of the text and integrity of the results presented. Jesus LA (0000-0002-4471-6057)* and Paz OS

(0000-0002-1126-0620)* contributed to data collection, data analysis and interpretation, manuscript writing, final approval of the text and integrity of the results presented. Santos JO (0000-0001-8687-6430)* contributed to the analysis and interpretation of data, writing of the manuscript, final approval of the text and integrity of the results presented. Vieira GN (0000-0002-7393-3958)* and Neves RF (0000-0002-3889-560X)* contributed to data interpretation, manuscript writing, critical review of the text, final approval of the text and integrity of the results presented. ■

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