


Sex education in adolescence: Can the nurse help?

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ABSTRACT

The study aims to analyze how much adolescents have been oriented regarding sexuality. Articles and studies published in recent years (2018-2022) in the Portuguese language, which addressed sex education in adolescents, were searched in the literature. Throughout the study, adolescents aged 13 to 19 years, students from all over the Brazilian federation, in schools and health centers, in public educational institutions, female and male, were approached, based on the work of nurses for guidance. With the role of the nurse in the education of adolescents for guidance on preventive methods, prevention against unwanted pregnancies and on safe relationships, they will be able to learn what they do not receive at school or at home, they will be able to be open to questions with the health professional, who is more oriented to answer these doubts and solve the problems faced by these generations.

Keywords: Nurse, Sex education and adolescents.

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INTRODUCTION

Adolescence is characterized by profound physical, social and psycho-emotional changes, and represents one of the most vulnerable moments in the human life cycle. In this phase, the impulses for physical, mental, emotional, sexual, social development and their efforts to conform to cultural expectations are demonstrated (SEHNEM, 2019).

Adolescence, the intermediate phase of human development that comprises the second decade of life, is marked by doubts and concerns, especially about current choices, self-care and prospects for the future. Adolescence is a period that increases autonomy, social immaturity, and risk behaviors that can cause repercussions on the sexual and reproductive health of adolescents, with a higher risk of unprotected and unplanned sexual practices, acquisition of sexually transmitted infections (STIs), unwanted pregnancies, and abortions (SANTARATO, et al., 2022).

As for sexuality in adolescence, Veneziani and Alonso (2022) reinforce the importance of recognizing that it is at this stage that the introduction to a "new universe" takes place, of which there is little knowledge, thus, nothing more propitious than that the greatest moment of dialogue and debate on the subject occurs at that moment.

However, most of the time, parents do not feel comfortable talking about these new sensations with their children, creating a prejudice around sexuality. Without correct and adequate information, adolescents are more susceptible to initiating sexual life without any guidance (FERREIRA, 2021).

In this context, Primary Health Care (PHC) services, the first level of care, welcoming users and families, establishing bonds and making individual and collective care accountable, can contribute to actions to promote and prevent diseases aimed at adolescents (ALVARENGA et al., 2021). Thus, considering that sexual health is defined as the state of physical, emotional, mental, and social well-being in relation to the exercise of sexuality, and not only the absence of sexual infections, dysfunctions, or diseases (ARAÚJO et al., 2021), the precocity of sexual initiation associated with the increase in rates of Sexually Transmitted Diseases (As of November 2016, the Department of Surveillance, Prevention and Control of STIs, HIV/AIDS and Viral Hepatitis started to use the nomenclature STI (Sexually Transmitted Infections) instead of STD (Sexually Transmitted Diseases) among adolescents requires intervention by health professionals (HUGO et al., 2011).

In this sense, nurses can contribute significantly to the health care of different population groups, including adolescents. Sexual and reproductive rights are considered fundamental along with the right to life, food, health, housing and education for the full exercise of citizenship. There are situations that affect the sexual health of adolescents and that interfere, unfavorably, in the safe start of sexual life, such as precarious lifestyle, gender inequities, silencing, denial of sexual rights, unqualified information, social and economic inequalities. These require a careful look from adults and a multidisciplinary approach to the provision of effective and lasting health actions that make



sense to adolescents and allow them to develop autonomy over their care (SANTARATO et al., 2022).

Educational actions aimed at adolescents should include sexual and reproductive health, doubts and fears about the theme addressed and, above all, the identification of the cultural context in which they are inserted, as the strategies must be consistent with their reality in order to be effective (GOTARDO; SCHMIDT, 2022).

Based on the above, the objective of the present study is to verify, through the literature, the role of nurses in the sexual education of adolescents.

METHODOLOGY

To carry out the qualitative systematic review research, the steps described by Sampaio and Mancini were used. This research method has its importance for the formulation of a critical synthesis and presentation of evidence on a topic. The database used was Lilacs, as it concentrates bibliographies in the area of health from the countries of Latin America and the Caribbean, with articles and journals of free and open access, including scientific journals in this area of knowledge from the Scielo database.

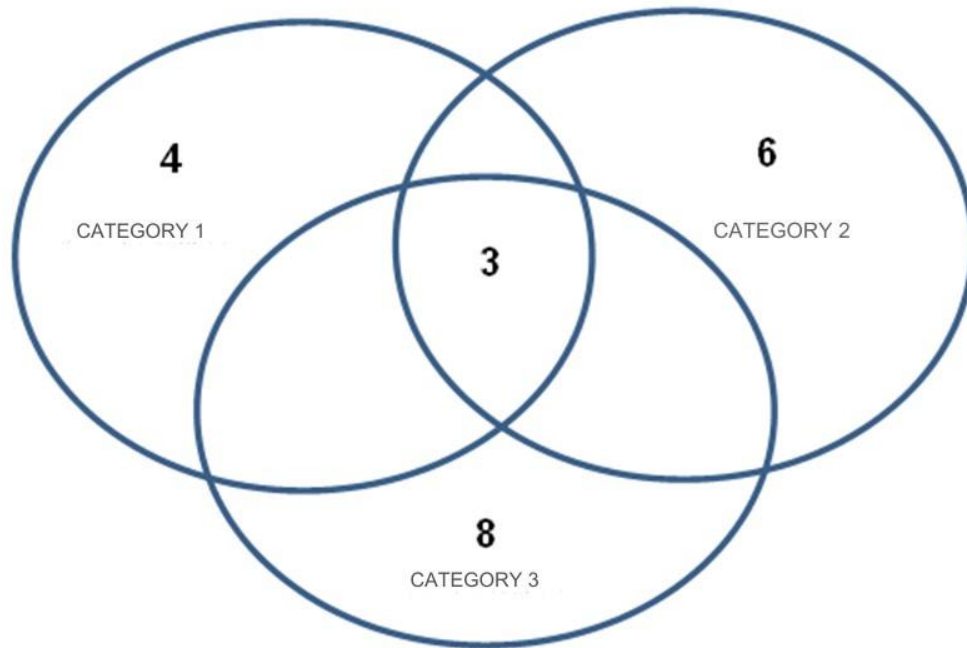
The search strategies carried out between the months of February and May 2023 were previously defined, and all studies on adolescent sex education, published as articles in scientific journals and journals, between the years 2018 and 2022, in Portuguese, were previously determined as an inclusion criterion. The descriptors in health (DeCS) were ("education" AND "sexual" AND "adolescents") and as search filters were used "full text", last "5 years" and in "Portuguese".

RESULTS AND DISCUSSION

A total of 1,579 articles were retrieved. The exclusion criterion was articles in other languages, prior to 2018 and that were not related to the theme. Thus, 21 articles were selected and organized into three categories: 1. Sex education in adolescents; 2. Sexually transmitted infections; and Pregnancy in adolescence.

The selected articles were quantified by categories and their intersections in more than one of them are represented in FIGURE 1.

Figure 1 - Distribution of articles according to categories and intersections found



Source: Researcher's data

The evolution and concentration of publications on the subject, with articles organized by year, categories, objectives and research results, are shown in Chart 1.

Table 1 - Concentration of publications by year, category, objectives and results

Reference	Category	Objectives	Results
2022			
COSTA et al., 2022	3	To report the experience of carrying out educational practices with adolescent puerperal women in a public maternity hospital.	There was a lack of knowledge about contraceptive methods among puerperal women. Related to sexual behavior, shyness, withdrawal and even fear of speaking were observed, especially when accompanied. The authors cite the importance of professional-user interaction.
LIMA et al., 2022	2	To analyze the scientific evidence on educational practices for the prevention of sexually transmitted infections in adolescence	The results suggest that long-term dialogical and participatory practices regarding STIs, carried out in groups and in the school environment, favor adherence to participation in educational activities and are better received and evaluated by adolescents. In addition, the need for constant actions on the theme was demonstrated, given the decrease in publications evidenced. Thus, it is suggested that these understand the young person in his/her complexity, being carried out in schools, health services and at home.



JESUS et al., 2022	1	To identify the knowledge of parents or guardians of adolescents in a city in Minas Gerais about sexuality, accountability about sex education and risk perception.	The survey showed positive results in relation to children's sex education, as most of them agree that this is the responsibility of the parents and also the duty of the school. There was a deficit in the knowledge of adolescents and their parents about STIs and early pregnancy, which reflects the perception of parents in relation to their children's sexual education and decision-making.
SANTARATO et al., 2022	1,2,3	To characterize the sexual practices of adolescents and their association with sociodemographic variables, sources of information and behavioral habits.	The results of this study allowed us to describe the diversity of sexual practices of adolescents, with the predominance of oral sex, followed by vaginal and anal sex, with a tendency towards early initiation, influence of gender and the association of the use of alcohol, drugs and cigarettes with sexual activities. These findings emphasize the role of nurses in the planning and implementation of health education interventions within PHC, in integration with schools, families and the community, regarding the promotion, protection and comprehensive care of adolescent health. Another relationship was in the initiation of safe sex with the family context, elucidating the fact that a more welcoming family environment, open to dialogue, generates an important impact on the decision-making process to have a sexual relationship in more or less safe ways and needs to gain space in the elaboration of public policies aimed at adolescent health.
2021			
ANDRADE et al., 2021	2	To evaluate the knowledge of adolescents and young people about issues related to sex in the city of Monte Alegre do Piauí (PI). The aim was to characterize the sociodemographic profile and identify knowledge about contraceptive methods, STIs and pregnancy in these periods of human development.	Data collection showed that 97.5% (n=79) of the participants had already had sex, starting with a mean age of 15.5 years. Condoms were the most well-known contraceptive method, however, it was observed that adolescents and young people did not prevent themselves in all sexual intercourse, even though they were aware of the consequences of non-prevention. Dialogical fragility was perceived between individuals, family and school; Conversation about the subject in the family and school environment was still fearful and unattractive.
SOARES; HELLMANN, 2021.	2	To identify the ethical issues related to PrEP in adolescents in the current scientific literature and discuss their impact on the implementation of this prevention strategy.	The issues identified may diminish the potential impact of PrEP on new HIV infections in the adolescent population. It is necessary to deepen the discussions on the subject, as there are evident gaps in relation to the ethics and prevention of HIV in adolescents, especially in sexual minorities, both in research and in care, and which can translate into barriers to its effective implementation.



DEMORI et al., 2021	3	Understand the cultural significance of pregnancy for pregnant adolescents.	<p>It is perceived that the adolescents construct their identity as mothers, based on their gestational experience and the construction of an identity as a woman-mother. The study also demonstrates that society has undergone changes over time and that these have been influencing the representations about motherhood, evidencing the existence of elements such as the desire to be a mother, even as an adolescent. Both the families and partners of the adolescents are supporters of the pregnancy, even if, at first, the discovery of the pregnancy causes doubt and anxiety in the adolescents.</p> <p>Although adolescent pregnancy is characterized, in a general sense, as an untimely advent and linked to other constituents with a negative connotation, it is also elaborated and perceived by adolescents as an event that generates positive conditioning.</p>
VIEIRA et al., 2021	1,2, 3	Identify adolescents' knowledge of safe sex practices and identify needs information for adolescents on sexually transmitted infections and pregnancy.	<p>The adolescents had previous and sometimes superficial conceptions about the prevention of STIs and pregnancy. Female participants had greater knowledge about contraceptive methods, sexually transmitted infections, and practices</p> <p>of safe sex. The identification of knowledge deficiency presented by the investigated group recommends the realization of activities related to the theme of sex education in schools.</p>
MARCONDES et al., 2021	1	Identify the expectations of adolescents about sex education; characterize the socioeconomic and cultural profile of adolescents	<p>The authors conclude that it is up to the school and the family to consider its importance in the context of the sex education process, and this would reduce the interference of the use of the media by adolescents. In this sense, we reflect on the relevance of the nurse's role in the process of Sex Education at school, whose participation was not mentioned in this study. Nurses, as educators, become essential in health education focused on the issue of sexuality. Finally, it should be noted that sexuality has an interdisciplinary character. The preparation and training of health and education professionals should be valued with regard to sex education.</p>
AZEVEDO; COSTA, 2021	2	To define the main causes and treatments of STIs in Brazil. The aim is to elucidate the following question: how can nursing contribute significantly to the awareness of infections caused by STIs in adolescence?	<p>The results obtained were based on the theory that nurses can be much more than exercising adolescent prevention, nursing can also know how to listen and dialogue with adolescents and solve all their doubts about sexuality. The theories presented demonstrate that there is a lack of foundation in the school, in the family and in society. It is known that only through public health programs that work will adolescents feel safer. to talk about and demystify the existing prejudices regarding the subject.</p>
2020			

<p>RIZZON et al., 2020</p>	<p>2</p>	<p>OBJECTIVE: To evaluate the risk behavior for sexually transmitted infections (STIs) in high school students in Urussanga-SC.</p>	<p>The sample consisted of 178 individuals, mostly female (61.4%), and the mean age was 16 years (± 1.04). Of the total, 50% had initiated sexual activities. Among females, 48.1% reported one partner, while among males, 40.7% reported four or more.</p> <p>Regarding the manifestations of STIs, 62.4% reported pain in the genital region as a warning sign, but the presence of wounds and discharge was recognized by less than 40% of the adolescents. Most of the adolescents had already received guidance and knowledge about sexuality, however, the results show a lack of understanding, which highlights the importance of sex education in schools. It is necessary to increase the visibility of the issue, a problem that remains in society today and is aggravated by the lack of adequate public policies. Also worrisome is the increase in the non-use of condoms from the first to the last sexual intercourse, especially among females.</p> <p>The adolescents' understanding of the importance of condoms, but the habit of not using them is repeated. This raises the hypothesis that the</p>
			<p>The greatest current concern of young people may be unwanted pregnancies, since a large part of the females in the study sample had an increase in the use of contraceptives, concomitantly with a decrease in the use of condoms. The results show a lack of real understanding, and show the need to address the theme before the age of sexual initiation in schools and the family environment, places reported as preferred. The school range is the main beneficiary of this education, since it is at this age that sexual activities begin.</p>
<p>LOPES et al., 2020</p>	<p>3</p>	<p>OBJECTIVE: To analyze the temporal trend and factors associated with adolescent pregnancy, according to maternal, pregnancy, childbirth and newborn characteristics, between the years 2000 and 2015, in the municipality of Maringá, in the state of Paraná (Maringá-PR).</p>	<p>The analysis of the data allowed us to know the trend and factors associated with pregnancy in adolescence, suggesting risk situations that may result from this event. Despite being a local study, it made it possible to collect information that can be used to propose, substantiate and/or improve the health strategies of adolescents, adolescent mothers and newborns. In the municipality studied, some risk situations were associated with adolescent pregnancy. In view of this, it is necessary to evaluate each region individually and verify that, depending on the characteristics, these pregnant women really do not present risks. Health professionals should be involved in actions to prevent adolescent pregnancy, discussing their effectiveness. It is important to listen to and reach out to families and adolescents, encouraging them to think about their choices and encouraging them to respect the limits for the development of a safe sexuality.</p>
2019			
<p>CARVALHO; OLIVEIRA, 2019</p>	<p>3</p>	<p>OBJECTIVE: To describe the perception of pregnant adolescents about prenatal nursing care.</p>	<p>It can be inferred that there was agreement that there is a need to expand and improve the prenatal care provided by nurses, such as providing clarification of the tests that are requested during the consultations and being attentive, observing the reactions of pregnant adolescents, who can often show doubts. Thus, it is believed that this study can contribute to the reflection of the role of nurses in prenatal consultations, especially among adolescents. Thus, it is proposed that new investigations be developed, seeking to highlight unique aspects of the nurses' performance, aiming to monitor the way in which their care is configured in these consultations.</p>



SILVA et al., 2019	1	To evaluate the health education strategies used with adolescents, based on existing publications in scientific journals.	It was possible to highlight the health education strategies carried out with adolescents, although they were evaluated in superficial and ineffective ways. It is noteworthy that participatory methodologies are of great contribution to the educational, reflective and dialogue development between professionals and adolescents. The devaluation of the use of scientifically based methodologies for the better evaluation of educational actions was identified. It was observed that Nursing is the area that has been standing out in publications, in the performance of interventions
			and educational actions. It is noteworthy the inclusion of a wide variety of professionals involved in research in this area of knowledge.
SANTOS et al., 2019	1,2, 3	To report the experience of these students in the PSE, emphasizing the contribution of academic training based on active methodologies for the construction and execution of practical insertion activities	In view of the process of construction of experience, execution and reflection, it is possible to observe that such activities induce the student to play his role in the process of knowledge construction, aligning theoretical knowledge – which must be contextualized and gain new meanings – with practice. Therefore, it is evident that the objectives of exchange, deconstruction and reconstruction of concepts that permeated the health promotion proposed by the students were successfully achieved through academic training based on active methodologies that enable the broad development of the student. In this sense, students in modern education develop communicative skills, autonomy, responsibility and security to lead and manage health promotion activities from their early insertion in primary care. Analyzing the effects of the work in the PSE on medical education, it is perceived that the student, in this context, is able to see the importance of health promotion actions, since he visualizes the wide reach of actions such as those developed through these programs and the impact they can bring to the health of the community. It also highlights the relevance of multidisciplinary and interdisciplinary work, as a team and also intersectoral, combining health and education, two areas responsible for profound and grassroots changes in society. In the same way, the commitment of the Unipampa Medicine course to promote feedback to the population within the scope of competencies related to health and society is reiterated.
ANDRADE et al., 2019	3	To characterize child care in the context of adolescent motherhood.	Motherhood in adolescence brings complexities, ambivalences and vulnerabilities that manifest themselves in the intense transition of roles that become intrinsically linked to the process of caring for oneself and the child, emerging difficulties and challenges in the construction of identity and in the performance of the role of being a mother. In view of the difficulties and potentialities represented in this context, it is concluded that the support network for adolescent mothers is relevant, with emphasis on the family, the child's father and health professionals, offering support that has repercussions on coping with this process and, consequently, on the quality of life and maternal and child health.
FERREIRA et al., 2019	1	To discuss the perception of adolescents about sexuality in the school environment.	The approach to sexuality itself was not identified as a regular theme offered with clear, intersectoral and multidisciplinary language, but still passed on in a traditional way, considering the students' difficulty in answering the research questions. It is inferred that in order to focus on topics such as sexuality, in addition to sexual and reproductive health, it is necessary to talk about sexual and reproductive rights, since the appropriate absence of this approach results in the vague or even erroneous answers obtained from the students, making it necessary, therefore, to



			adopt strategies for adolescents' knowledge about the subject, so that there is an understanding not only of the biological factor in relation to the sexual act and pregnancy but, above all, of the psychological, social and cultural aspects that permeate this issue. Promoting an approximation between health and education in order to evaluate their action plans and their social repercussions on the lives of adolescents can also be a strategy that will support the Brazilian sexual and reproductive health policy.
2018			
RAMOS et al., 2018	2	to identify the use of contraceptive methods by adolescents from a public school in the interior of Maranhão.	The results of this study show that adolescents have information about contraceptive methods, especially male condoms and contraceptive pills. However, some adolescents still stated that they did not have information about these methods. It is worth noting that, although most of them had information, the use of the methods did not even surpass the number of adolescents who stated that they had already started their sexual life. In addition, there was a reduced visibility of health professionals, who were rarely cited as sources of information. These issues support the need to constantly develop health actions that improve adolescents' knowledge about contraception, so that they can exercise their sexuality more safely. In addition, it envisions the involvement of parents, teachers and health professionals in this process, in order to minimize the vulnerabilities that adolescents may be exposed to during this period. The importance of the role of nurses, especially that of educator, as a way of intervening in the difficulties and fragilities that adolescents have, so that they can fully perform their sexuality in a healthy way, is highlighted as implications for nursing.
COIMBRA et al., 2018	3	To identify the perception of nursing students about their preparation in the undergraduate context for the care of pregnant adolescents.	It was found that most of them feel technically and psychologically unprepared due to the little contact with this public during the internships and the absence of a specific approach to the subject during the training. Nevertheless, they were able to identify several essential actions for the care of pregnant adolescents, especially those related to the maintenance of the biological body, without prejudice, however, to promotion and prevention actions. From the results obtained, it is confirmed that there is a need for alignment and integration between the disciplines, aiming at strengthening the relationship between theory and practice and the acquisition of skills consistent with the needs of pregnant adolescents.
DAMASCENA et al., 2018	3	To evaluate the self-esteem of pregnant adolescents, describing them in terms of their sociodemographic and clinical characteristics, in addition to identifying the level of self-esteem and the influence of sociodemographic variables on their scores.	It was identified that, despite the high rate of pregnant women in the municipality in question, it is lower than in the Southeast Region. All participants had unsatisfactory self-esteem, demonstrating the need for health professionals to act, since this interferes with the mother's care of her child. Some forms of nursing interventions could be punctuated by providing guidance on prenatal care and encouraging healthy lifestyle habits.

<p>MARANHÃO et al., 2018</p>	<p>3</p>	<p>To analyze family and social reactions to adolescent pregnancy.</p>	<p>It was observed that the disclosure of adolescent pregnancy can generate ambiguous feelings in the family, the child's father and friends. There was a predominance of surprised reactions of the people who lived with the young woman, which later turned into positive feelings of joy and acceptance. Such attitudes enabled the establishment of satisfactory relationships and the provision of social and emotional support. However, some young women reported negative family, marital and social reactions to the revelation of pregnancy, characterized by verbal aggression, imposition of abortion, refusal of paternity and distancing from friends. Some adolescents reported discriminatory attitudes that came from their friends' mothers, who perceived the young pregnant woman as a "bad influence" on their daughters of the same age. In addition, health professionals have also been identified as perpetrators of unethical attitudes "influence" their daughters of the same age. In addition, health professionals were also identified as authors of unethical attitudes</p>
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Publications had a higher concentration in 2019, with a significant quantitative jump from 2020 to 2021. Considering the categories used as criteria for organizing the articles, it can be seen that the highest concentration of recovered studies focuses on the theme "pregnancy in adolescence", followed by "Sexually transmitted infections" and "sex education in adolescents". Few studies have addressed the themes of the three categories simultaneously. Although the theme "sex education in adolescents" presents a smaller number of studies, it is observed that the theme is more studied in the last two years. These findings emphasize the role of nurses in the planning and implementation of health education interventions within PHC, in integration with schools, families and the community, regarding the promotion, protection and comprehensive care of adolescent health.

Sex education for children and adolescents is still surrounded by many taboos. The tripod formed by the family, community and school, which should guide adolescents in their sexual and reproductive choices, presents severe limitations to perform its function. In theory, the approach to the subject is usually centered on reproductive biology or advice without depth.

To take care of the adolescent's health, professional involvement, respect for privacy and confidentiality, and individual counseling practices are required in which the information obtained is only disclosed with the adolescent's own consent. (VENTURA and CORRÊA, 2006). A large part of the problems that affect adolescents can be attributed to a reflection of unprotected sexual practices. Considering that the practice of sexual orientation of adolescents is part of nursing practice, the results may contribute to demonstrate the importance of the implementation of actions by nursing professionals, based not only on theoretical and practical knowledge, but also on knowledge of the adolescents' own life experiences, aiming mainly at the health and quality of life of the adolescent.

According to Silva et al. (2019), nursing has stood out in publications, interventions, and educational actions. Although health education strategies carried out with adolescents are superficially and ineffective evaluated, participatory methodologies are of great contribution to the educational, reflective and dialogue development between professionals and adolescents. The authors



also mention that there is a wide variety of public policies aimed at adolescent health. However, there are few effective and prioritized for the construction and social formation of adolescents, in which school environments predominate for the initiative of educational strategies.

SEX EDUCATION IN ADOLESCENTS

With regard to category 1 - sex education in adolescents - it was found that the studies were developed in the school and nursing spheres.

Regarding the role of the school in the sexual education of adolescents, Ferreira et al. (2019) report that education related to sexuality is usually carried out in an unsystematic and discontinuous way, with a strictly biological approach, ignoring the historical, social, and cultural aspects involved in this process around the construction of meanings. Although the formal education model offered in school institutions is properly organized and structured in relation to its pedagogical material, training of its educators and curriculum, the aspects of gender and reproduction need to be recognized when addressing sexuality, understanding that it goes beyond the biological aspect. Its approach should be multidimensional, focusing on the cultural and social aspects of adolescents, so that it promotes their perception of different concepts about ways of life and sexual and reproductive health.

With regard to the sexual education of children, positive results were observed in a study carried out by Jesus et.al. (2022), since most understand that this is a responsibility of parents and a duty of the school. However, both adolescents and their parents have a deficiency in knowledge about sexually transmitted infections (STIs) and early pregnancy, which indicates the parents' perception of their children's sexual education and decision-making.

For Marcondes et.al (2021), sex education is an interdisciplinary subject. And, even if it is up to the school and the family to consider its importance in the context of the sex education process, which contributes to reducing the use of the media by adolescents, this process can also count on the nursing professional who, although not mentioned in this study, has a relevant and recognized role in health education focused on the issue of sexuality. in the school environment.

SEXUALLY TRANSMITTED INFECTIONS

In category 2 - sexually transmitted infections, the studies were divided into the themes "contraceptive methods", "ethical issues related to Pre-Exposure Prophylaxis (PrEP) in HIV infections in the adolescent population" and "causes, treatments and educational practices for the prevention of sexually transmitted infections in adolescence".

In Lima's studies et.al. (2019), educational practices were analyzed to understand young people in their complexity with regard to STI prevention. They detected that there was a decrease in publications and, therefore, perceived the need for constant actions on this subject through research



in schools, health services and homes. In order for young people to better understand the prevention of STIs, the authors suggest that long-term dialogic and participatory practices be carried out, in groups and in the school environment, which favors adherence, as these are well evaluated and well received by adolescents.

Still on issues related to sex, in the city of Monte Alegre do Piauí (PI), Andrade, et.al. 2021 to assess the knowledge of this topic in an audience of adolescents and young people. They identified that, at this stage of development, 97.5% (n=79) of the participants had already had sex, since the age of 15.5 years, on average. They found that the most well-known contraceptive method among them is the condom, but despite being aware of the consequences of non-prevention, they did not use it in all sexual relations. In addition, they perceived, both in the school environment and in the family environment, fears for conversations about the theme, that is, for them it is still a subject with few openings for dialogue.

On issues related to Pre-Exposure Prophylaxis (PrEP) in adolescents, Soares and Hellmann (2021) studied the ethics and impact on the implementation of the HIV prevention strategy. They evidenced gaps, especially in relation to sexual minorities, both in research and in care, signs that may indicate barriers to its effective implementation, hence the need for in-depth discussions on the subject.

Still on issues related to existing prejudices in relation to the dialogue about STIs with adolescents, Azevedo and Costa (2021) noticed that there is a lack of foundation in school, in the family, and in society for this interaction. They identified that Nursing can contribute significantly to the awareness of STIs at this stage, because nurses, through public health programs that work, can do much more than prevent adolescents, but also know how to listen to them and make them safe for dialogue, solving all their doubts about sexuality.

Rizzon et. al. (2020), to evaluate the risk behavior for sexually transmitted infections (STIs) in high school students in Urussanga-SC. A total of 178 individuals participated in the study, 61.4% of whom were female, with a mean age of 16 years (± 1.04). Of the total, 50% had already started their sexual life. In the female group, 48.1% reported having one partner, while in the male group, 40.7% reported four or more. The authors identified that 62.4% of the participants were aware of some manifestations of STIs, such as pain in the genital region as a warning sign, and less than 40% recognized the presence of sores and discharge. Although most of the adolescents received guidance and knowledge about sexuality, there were gaps in understanding. It is necessary to be concerned about the increase in the non-use of condoms from the first to the last sexual intercourse, especially among females. Even knowing the importance of using condoms, the habit of not using them is repeated. In view of this condition, there was an increase in the use of contraceptives, concomitantly with a decrease in the use of condoms, which leads to the understanding that there is a greater



concern with unwanted pregnancy. There is, therefore, a flaw in the real understanding, which evidences the need to address the theme before the age of sexual initiation, in schools, especially when sexual activities begin, and in the family environment, places reported as preferred. It is necessary to increase the visibility of the theme, as this is a problem experienced in today's society, further aggravated by the lack of adequate public policies.

Also on contraceptive methods, Ramos et. al. 2018 found, in a public school in the interior of Maranhão, that most adolescents know, especially male condoms and the contraceptive pill, and, even so, the use of these methods did not exceed the number of adolescents who have already started their sexual life. Few students said they had received information on the subject from health professionals. In view of the need to constantly promote health actions that improve adolescents' knowledge about contraception, involving parents, teachers and health professionals in the process, the authors highlight the importance of nurses, especially nurses in the role of educators, intervening in the difficulties and weaknesses that adolescents have for the full performance of their sexuality in a healthy way.

ADOLESCENT PREGNANCY

In category 3 - Adolescent pregnancy, it was found that the various studies addressed different themes, namely: the preparation of nurses to care for pregnant adolescents; assessment of the self-esteem of pregnant adolescents; family and social reactions to adolescent pregnancy; the perception of pregnant adolescents about prenatal nursing care; child care in the context of adolescent motherhood; factors associated with adolescent pregnancy; The cultural significance of pregnancy for pregnant adolescents and the experiences in carrying out educational practices with adolescent puerperal women in a public maternity hospital.

In a report on the performance of educational practices with adolescent puerperal women in a public maternity hospital, Costa et.al (2022) verified their lack of knowledge about contraceptive methods, and regarding sexual behavior, they were shy, withdrawn, and afraid to speak, especially when accompanied. For the authors, it is necessary to carry out a professional-user interaction, which provides everyone with the exchange of knowledge.

The study by Demori et. al. (2021), which concerns the understanding of the cultural meaning of pregnancy for pregnant women, demonstrates that a pregnant adolescent constructs her identity as a mother while experiencing pregnancy and while constructing an identity as a woman-mother. The authors verified changes in society over time, which influence the representations of motherhood. The desire to be an adolescent mother is already observed, even if, when she discovers it, she shows doubt and anxiety. The families and partners of the adolescents already support the pregnancy. These



signs lead adolescents to elaborate and perceive that pregnancy at this stage is a fact that causes positive conditions, even if, in the general sense, it is seen as negative.

Lopes et.al. (2020) studied the trend and factors associated with adolescent pregnancy, according to maternal, pregnancy, childbirth, and newborn characteristics, between 2000 and 2015, in Maringá-PR, aiming to improve health strategies for this population. They found some risk situations associated with adolescent pregnancy. However, they perceive the need to individually evaluate each region in order to certify whether these pregnant women are not at risk in view of their peculiar characteristics. In this context, health professionals can get involved in adolescent pregnancy prevention actions, discussing their effectiveness, can listen to adolescents and their families so that they are encouraged to think about their choices and encourage them to respect the limits for the development of a safe sexuality.

To reflect on the role of nurses in prenatal consultations, especially for adolescents, Carvalho and Oliveira (2019) perceive the need to expand and improve this care by nurses, with regard to providing clarification of the tests that are requested during consultations and observing, always and attentively, the reactions of pregnant adolescents who, Often, they can show doubts. From this perspective, they suggest that further investigations should be carried out to highlight unique aspects of nurses' performance, with the objective of monitoring how care actually occurs in these consultations.

Andrade's research et.al. (2019) focuses on child care in the context of adolescent motherhood. It was found that, at this stage, a pregnancy brings many complexities, ambivalences and vulnerabilities, since, in this condition, there is an intense transition of roles inherently linked to taking care of oneself and the baby, which configure difficulties and challenges to build the identity of being a mother. In view of this, it is necessary to develop a support network for the adolescent mother, in which the family, the child's father and health professionals participate, so that the adolescent can find support to face this process with quality of life and maternal and child health.

Coimbra et. al. (2018), in a study on the perception of nursing students about how graduation prepares them about the care of pregnant adolescents, identified that most of them feel technically and psychologically unprepared, because the contact that undergraduate students establish with this public during internships is small and, also, because during training, There is no specific approach to the topic. Even so, they realized that several actions, essential to the care of pregnant adolescents, can be carried out, mainly related to the maintenance of the biological body, without prejudice, however, to promotion and prevention actions. There is, therefore, a need for alignment and integration between the disciplines, so that the relationship between theory and practice can be strengthened, as well as the acquisition of skills consistent with the needs of pregnant adolescents.



To assess the self-esteem of pregnant adolescents, Damascena et.al. (2018) studied pregnant adolescents treated at Basic Health Units in a municipality in the interior of Minas Gerais. To this end, they verified sociodemographic and clinical characteristics, with the objective of identifying the level of self-esteem and the influence of sociodemographic variables on their scores. The rate of pregnant women is high, although lower than that of the Southeast Region, all participating patients had unsatisfactory self-esteem, which demonstrates the need for health professionals to act, as it interferes in the mother's care for her child. Here, it is possible to perceive the possibility of intervention by nursing professionals, interventions in orientations about prenatal care and the encouragement of healthy lifestyle habits.

Still on the subject of teenage pregnancy, Maranhão et.al. (2018) analyzed family and social reactions to pregnancy at this stage and observed ambiguous feelings in the family, the child's father, and friends, generated by the disclosure of adolescent pregnancy. The surprised reactions of the people who lived with the young pregnant woman predominated, but later these reactions were transformed into positive feelings of joy and acceptance. These attitudes contributed to generating good relationships and providing social and emotional support. However, there were reports of negative family, marital and social reactions to the revelation of the pregnancy, characterized by verbal aggression, imposition of abortion, refusal of paternity and distancing from friends, discriminatory attitudes coming from the friends' mothers, who judged the young pregnant woman as a "bad influence" on their daughters of the same age. In addition, health professionals were also identified as authors of unethical attitudes.

STUDIES INVOLVING SIMULTANEOUS CATEGORIES

Among the articles that present the 3 categories: sex education in adolescents, Sexually transmitted infections and pregnancy in adolescence, are the studies by Santarato et al. (2022), Vieira et.al. (2021) and Santos et.al. (2019).

Santarato et al. 2022 found a diversity of sexual practices among adolescents, predominantly oral sex, followed by vaginal and anal sex, with a tendency towards early initiation, gender influence, and the association of alcohol, drugs, and cigarette use with sexual activities. These signs show the relevance of the role of nurses in planning and carrying out health education interventions within PHC, integrated with the school, family and community, regarding the promotion, protection and comprehensive care of adolescent health. They also perceived a relationship between the initiation of safe sex and the family context, which shows that a family environment open to dialogue and welcoming the adolescent impacts the decision process to have a sexual relationship in more or less safe ways. They also indicate the need to develop public policies aimed at adolescent health.



In Vieira's studies et.al. (2021) adolescents had previous, and sometimes superficial, conceptions regarding STI prevention and pregnancy. Female participants had greater knowledge about contraceptive methods, sexually transmitted infections, and safe sex practices. The identification of knowledge deficiency presented by the investigated group recommends the realization of activities related to the theme of sex education in schools.

Santos et.al. (2019) report the experience of students in the PSE, emphasizing the contribution of academic training based on active methodologies for the construction and execution of practical insertion activities. In view of the process of construction of experience, execution and reflection, it is observed that such activities induce the student to play his role in the process of knowledge construction, aligning theoretical knowledge, contextualization and new meanings, when experiencing the practice. The objectives of exchange, deconstruction and reconstruction of concepts that permeated the health promotion proposed by the students were successfully achieved through active methodologies that contribute to the student's broader development, such as communicative skills, autonomy, responsibility and security to lead and administer health promotion activities from their early insertion in primary care. This is reflected in the performance of the PSE in medical education, as the student can see the importance of health promotion actions, by perceiving how the actions developed through these programs impact the health of the community. They highlight the relevance of multidisciplinary and interdisciplinary work, in teams and also intersectoral, in health and education, areas responsible for profound and grassroots changes in society.

CONCLUSION

The studies addressed several themes related to adolescents and their orientation regarding sexuality, which were presented in three categories: sex education in adolescents, sexually transmitted infections and pregnancy in adolescence.

Regarding sex education for adolescents, it is generally carried out in an unsystematic and discontinuous way, with a strictly biological approach. Most parents and children understand that sex education is the responsibility of the parents and the duty of the school. But there is a deficiency in knowledge about sexually transmitted infections (STIs) and early pregnancy. And as it is an interdisciplinary subject, the nursing professional has a relevant and recognized role as essential in health education focused on sexuality in the school environment.

Regarding sexually transmitted infections, there is a need for constant actions on this subject through research in schools, long-term dialogical and participatory practices, in groups and in the school environment, health services and at home, so that young people need to better understand the prevention of STIs. They start their sexual life at an early age, and live in a context of fear for conversations both at school and in the family. The most well-known contraceptive method among



them is the condom, they know the consequences of non-prevention, and they do not use it in all sexual relations. There are gaps on issues related to Pre-Exposure Prophylaxis (PrEP) in adolescents, especially in relation to sexual minorities, both in research and in care, signs that may indicate barriers to its effective implementation, which indicates that prejudices exist in relation to the dialogue about STIs with adolescents. There is a lack of foundation for school/family/society interaction. The use of contraceptives has increased in recent years due to the fear of unwanted pregnancies at this stage. Most adolescents are familiar with male condoms and the contraceptive pill, and even so, the use of these methods has not surpassed the number of adolescents who have already started their sexual lives. Few students received information on the subject from health professionals.

With regard to adolescent pregnancy, there is a lack of knowledge about contraceptive methods. As for sexual behavior, the adolescent behaves timidly and is afraid to speak, especially if accompanied. The pregnant woman constructs her identity as a mother while experiencing pregnancy and while constructing an identity as a woman-mother, there are many difficulties linked to taking care of herself and the baby to build this identity. In addition, it deals with different reactions from the family and the partner, **such as** reactions of surprise, joy and acceptance, but also negative reactions to the revelation of the pregnancy, such as verbal aggression, imposition of abortion, refusal of paternity, distancing from friends, discrimination. Some risk situations associated with pregnancy were identified, depending on the region in which the patient resides. With regard to consultations, nurses can act in prenatal consultations with expansion and improvement of this care, always and attentively observe the reactions of pregnant adolescents, who can often show doubts. Another aggravating factor is that most patients have unsatisfactory self-esteem, which demonstrates the need for health professionals to act, as it interferes with the mother's care for her child.

These studies reinforce the role of nurses in planning, guiding and carrying out health education interventions within PHC, in integration with schools, families and the community, regarding the promotion, protection and comprehensive care of adolescent health. Nursing can contribute significantly to education and sexuality in adolescence. Through public health programs, it can do much more than exercise adolescent prevention, but also know how to listen to them and make them safe for dialogue. In the role of educator, nurses can intervene in the difficulties and weaknesses that adolescents have for the full performance of their sexuality in a healthy way. They can also be involved in actions to prevent teenage pregnancy.

Most nursing students feel technically and psychologically unprepared, because the time and contact with this public during the internship are limited. It is necessary to align and integrate the disciplines in order to strengthen the relationship between theory and practice, so that nursing professionals can contribute effectively.



With the role of the nurse in the education of adolescents for guidance on preventive methods, prevention against unwanted pregnancy and safe relationships, they will be able to learn what they do not have at school or at home, they will be able to be open to questions with the health professional, who is more oriented to answer these doubts and solve the problems faced by this generation.

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REFERENCES

1. Alvarenga, J. P. O., Leandro, S. S., Soares, N. S., et al. (2021). Modelo de formação para a atenção primária à saúde: evidências no contexto do ensino de enfermagem. **Enfermagem Foco**, Brasília-DF.
2. Andrade, P. S. P. de, Barros, K. R. de S., Santos, J. P. dos, Nascimento, E. F. do, & Bacelar, P. A. A. (2021). Conhecimento de adolescentes e jovens sobre questões relacionadas ao sexo, em uma escola pública de Monte Alegre do Piauí-PI. **Gerais: Revista Interinstitucional de Psicologia**, 14(2), 1-23. <https://dx.doi.org/10.36298/gerais202114e16279>
3. Andrade, R. D., et al. (2019). O cuidado da criança por mães adolescentes. **Revista Enfermagem UFPE Online**, 13, e236228.
4. Araujo, M. A. L., Uesono, J., Machado, N. M. da S., Pinto, V. M., & Amaral, E. (2021). Protocolo Brasileiro para Infecções Sexualmente Transmissíveis 2020: abordagem às pessoas com vida sexual ativa. **Epidemiologia e Serviços de Saúde**, 30(spe1), e2020628. <https://doi.org/10.1590/S1679-4974202100003.esp1>
5. Azevedo, L. C. M. de M., & Costa, M. de O. (2021). A importância da conscientização da IST na adolescência e como a enfermagem pode contribuir para a diminuição destas infecções. **Research, Society and Development**, 10(13), e343101321393. DOI: <http://dx.doi.org/10.33448/rsd-v10i13.21393>
6. Carvalho, S. S., & Oliveira, L. F. de. (2020). Percepção de adolescentes gestantes sobre a assistência de enfermagem ao pré-natal. **Enfermagem Foco (Brasília)**, 11(3), 195-201.
7. Coimbra, W. da S., et al. (2018). Preparo de acadêmicos de enfermagem para o cuidado a adolescentes grávidas. **REME: Revista Mineira de Enfermagem**, 22, e-1102.
8. Costa, C. A., et al. (2022). Práticas educativas sobre planejamento reprodutivo com mães adolescentes: relato de experiência. **Saúde Coletiva (Barueri)**, 12(74), 9760-9769. <https://doi.org/10.36489/saudecoletiva.2022v12i74p9760-9769>
9. Damacena, L. C. A., et al. (2018). Gestação na adolescência e autoestima. **Revista Enfermagem Atenção Saúde**, 7(3), 39-49.
10. Demori, C. C., et al. (2021). Realização de um sonho: o significado cultural da gravidez para gestantes adolescentes. **Revista Enfermagem Atenção Saúde**, 10(1), e202111.
11. Ferreira, E. de A., et al. (2021). Sexualidade na percepção de adolescentes estudantes da rede pública de ensino de Macapá. **Saúde Coletiva (Barueri)**, 8(45), 812-816. <https://doi.org/10.36489/saudecoletiva.2018v8i45p812-816>
12. Ferreira, E. de A., Alves, V. H., Pereira, A. V., Rodrigues, D. P., Santos, M. V. dos, & Gabrielloni, M. C. (2019). Sexualidade na percepção de adolescentes estudantes da rede pública de ensino: contribuição para o cuidado. **Revista Pesquisa (Universidade Federal do Estado do Rio de Janeiro, Online)**, 11(5), 1208-1212.
13. Gotardo, P. L., & Schmidt, C. L. (2022). Atuação do enfermeiro na atenção à saúde sexual e reprodutiva de adolescentes. **Conjecturas**, 22(13), 453-467. Recuperado de <http://conjecturas.org/index.php/edicoes/article/view/1701>



14. Hugo, T. D. de O., et al. (2011). Fatores associados à idade da primeira relação sexual em jovens: estudo de base populacional. **Cadernos De Saúde Pública**, 27(11), 2207–2214. <https://doi.org/10.1590/S0102-311X2011001100014>
15. Jesus, H. R. de, et al. (2022). Saberes sobre sexualidade: conhecimento de pais ou responsáveis por adolescentes. **Saúde Coletiva (Barueri)**, 12(74), 9908–9921. <https://doi.org/10.36489/saudecoletiva.2022v12i74p9908-9921>
16. Lima, L. V. de, et al. (2022). Educational practices for the prevention of sexually transmitted infections in adolescence: a realistic review / Práticas educativas para a prevenção de infecções sexualmente transmissíveis na adolescência: uma revisão realista. **Revista De Pesquisa Cuidado é Fundamental Online**, 14, e–11755. <https://doi.org/10.9789/2175-5361.rpcfo.v14.11755>
17. Lopes, M. C. de L., et al. Tendência temporal e fatores associados à gravidez na adolescência. **Revista Escola Enfermagem USP**, 54, 2020. <https://doi.org/10.1590/S1980-220X2019020403639>
18. Maranhão, T. A. (2018). Atitudes e reações familiares e sociais diante da gravidez na adolescência. **Revista Enfermagem UFPE Online**, 12(4), 840-848.
19. Marcondes, F., et al. (2021). Educação sexual entre adolescentes: um estudo de caso. **Nursing (São Paulo)**, 24, 5357-5366. <https://doi.org/10.36489/nursing.2021v24i274p5357-5366>.
20. Ramos, L. de A. S., et al. (2018). Uso de métodos anticoncepcionais por mulheres adolescentes de escola pública. **Cogitare Enferm**, 23(3), e55230. <http://dx.doi.org/10.5380/ce.v23i3.55230>
21. Rizzon, B. B., et al. (2021). Comportamento de risco para infecções sexualmente transmissíveis em estudantes do ensino médio / Risk behavior for sexually transmitted infections in high school students. **Femina**, 49(1), 52-57.
22. Santarato, N., et al. (2022). Caracterização das práticas sexuais de adolescentes. **Revista Latino-Americana De Enfermagem**, 30(spe), e3712. <https://doi.org/10.1590/1518-8345.6289.3712>
23. Santos, A. C. D., et al. (2019). Relato de Experiência: Construção e Desenvolvimento do Programa de Saúde na Escola (PSE) sob a Perspectiva da Sexualidade na Adolescência. **Revista Brasileira de Educação Médica**, 43(4). <https://doi.org/10.1590/1981-52712015v43n4RB20180248>.
24. Sehnem, G. D., Crespo, B. T. T., Lipinski, J. M., et al. (2019). Saúde sexual e reprodutiva dos adolescentes: percepções dos profissionais de enfermagem. **Avances Enfermagem**, 37(3), 343-352.
25. Silva, R. P. da. (2019). Avaliação das estratégias de educação em saúde com adolescentes. **Revista APS**, 22(2), 385-404.
26. Soares, F. M., & Hellmann, F. (2022). Ethics and pre-exposure prophylaxis (PrEP) in adolescents: an integrative review. **Brazilian Journal of Sexually Transmitted Diseases**, 33. <https://doi.org/10.5327/DST-2177-8264-20213333>
27. Veneziani, M. C., & Alonso, R. A. G. M. (2022). Ações de prevenção em saúde sexual para adolescentes: a atuação de acadêmicos de medicina em programa de saúde na escola. **Revista Eletrônica Acervo Saúde**, 15(7), e10618. <https://doi.org/10.25248/reas.e10618.2022>



28. Ventura, M., & Corrêa, S. (2006). Adolescência, sexualidade e reprodução: construções culturais, controvérsias normativas, alternativas interpretativas. *Cadernos de Saúde Pública*, 22(7), 1505–1509.
29. Vieira, K. J., et al. (2021). Conhecimentos de adolescentes sobre métodos contraceptivos e infecções sexualmente transmissíveis. *Revista Baiana De Enfermagem*, 35. <https://doi.org/10.18471/rbe.v35.39015>



ATTACHMENTS

Appendix A – Guidelines for Authors (Research, Society and Development) Available at:

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- Body of the text (it should contain the following sections: 1. Introduction, in which there is contextualization, problem studied and objective of the article; 2. Methodology used in the study, as well as authors supporting the methodology; 3. Results (or alternatively, 3. Results and Discussion, renumbering the other sub-items); 4. Discussion and, 5. Final Thoughts or Conclusion);
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2) Layout:

- Word format (.doc);
- Written in 1.5 cm spacing, using Times New Roman font 10, in A4 format and the margins of the text should be 1.5 cm lower, top, right and left;
- Indents are made on the text editor ruler (not by the TAB key);
- Scientific articles must be longer than 5 pages.

3) Figures:

The use of images, tables and illustrations should follow common sense and, preferably, the ethics and axiology of the scientific community that discusses the themes of the manuscript. Note: the maximum file size to be submitted is 10 MB (10 megabytes).



Figures, tables, charts, etc. (must have their name in the text before being inserted. After inserting it, the source (where the figure or table comes from...) and a comment paragraph should be stated in which it is said what the reader should observe that is important in this resource. The figures, tables and charts... they should be numbered in ascending order. Titles of tables, figures, or tables should be placed at the top and fonts at the bottom.

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The word file sent (attached) at the time of submission must NOT have the names of the authors.

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The article can have a maximum of 10 authors. For exceptional cases, prior consultation with the Journal Team is required.

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