

Educational practices on the health of young adolescents: An experimental report on education and health

Práticas educacionais sobre a saúde de adolescentes jovens: Um relatório experimental sobre educação e saúde

Prácticas educativas sobre la salud de los adolescentes jóvenes: Informe experimental sobre educación y salud

Received: 08/11/2025 | Revised: 11/11/2025 | Accepted: 11/12/2025 | Published: 11/14/2025

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Abstract

Women's health in primary education is essential for female students' well-being and development. Traditionally, general activities on this topic caused discomfort due to derogatory comments. To improve effectiveness, specific interventions were introduced. The objective of this study was to provide scientific. Knowledge about women's health to female students in Elementary School II. The activities included: i) a school presentation; ii) a survey of prior knowledge; and iii) educational interventions. Results showed that 52% of students knew about endometriosis, 80% used contraceptives, and 80% were followed by gynecologists. While these numbers indicate preventive measures, they also reveal gaps in reproductive physiology knowledge, likely due to limited scientific information access. The findings highlight schools as key spaces for disseminating health information. Outreach projects help undergraduate students share knowledge and contribute to public health. The experience gained will support future initiatives to strengthen health education in primary schools.

Keywords: Young Women's Health; Endometriosis; Scientific Awareness; Adolescent Health; Health and Education.

Resumo

A saúde da mulher no ensino fundamental é essencial para o bem-estar e o desenvolvimento das alunas. Tradicionalmente, as atividades gerais sobre esse tema causavam desconforto devido a comentários depreciativos. Para melhorar a eficácia, foram introduzidas intervenções específicas. O objetivo era fornecer conhecimento científico

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sobre saúde da mulher às alunas do segundo ciclo do ensino fundamental. As atividades incluíram: i) uma apresentação na escola; ii) uma pesquisa sobre conhecimentos prévios; e iii) intervenções educacionais. Os resultados mostraram que 52% das alunas sabiam sobre endometriose, 80% usavam contraceptivos e 80% eram acompanhadas por ginecologistas. Embora esses números indiquem medidas preventivas, eles também revelam lacunas no conhecimento sobre fisiologia reprodutiva, provavelmente devido ao acesso limitado a informações científicas. Os resultados destacam as escolas como espaços fundamentais para a disseminação de informações sobre saúde. Os projetos de extensão ajudam os alunos de graduação a compartilharem conhecimentos e contribuir para a saúde pública. A experiência adquirida apoiará iniciativas futuras para fortalecer a educação em saúde nas escolas primárias.

Palavras-chave: Saúde da Mulher Jovem; Endometriose; Conscientização Científica; Saúde do Adolescente; Saúde e Educação.

Resumen

La salud femenina en la educación primaria es esencial para el bienestar y el desarrollo de las alumnas. Tradicionalmente, las actividades generales sobre este tema causaban incomodidad debido a los comentarios despectivos. Para mejorar la eficacia, se introdujeron intervenciones específicas. El objetivo era proporcionar conocimientos científicos sobre la salud femenina a las alumnas de la escuela primaria II. Las actividades incluyeron: i) una presentación en la escuela; ii) una encuesta sobre los conocimientos previos; y iii) intervenciones educativas. Los resultados mostraron que el 52 % de las alumnas conocían la endometriosis, el 80 % utilizaban anticonceptivos y el 80 % eran seguidas por ginecólogos. Si bien estas cifras indican que se toman medidas preventivas, también revelan lagunas en los conocimientos sobre fisiología reproductiva, probablemente debido al acceso limitado a la información científica. Los resultados ponen de relieve que las escuelas son espacios clave para la difusión de información sobre salud. Los proyectos de divulgación ayudan a los estudiantes universitarios a compartir conocimientos y contribuir a la salud pública. La experiencia adquirida servirá de apoyo a futuras iniciativas para reforzar la educación sanitaria en las escuelas primarias.

Palabras clave: Salud de las Mujeres Jóvenes; Endometriosis; Concienciación Científica; Salud de los Adolescentes; Salud y Educación.

1. Introduction

Adolescence is marked by significant biological, cognitive, emotional, and social transformations. Such transformations make adolescents naturally vulnerable to many situations, sexual activity being a determining factor in this vulnerability, which contributes to the increase in Sexually Transmitted Infections (STIs) in this age group (Gniewosz; Gniewosz, 2020; Mastorci et al., 2024; Ross et al., 2020). It is important to note that adolescents generally have a different habit of attending health centres than adults, which makes it challenging to provide the necessary follow-up (Mastorci et al., 2024; Sanders et al., 2018). Therefore, it is important to implement health education practices in places where they are already present daily, such as at school (Ross et al., 2020). Historically, public schools have been recognized as fundamental spaces for promoting health-related practices and experiences among students (Auld et al., 2020; Rizvi, 2022; Rodrigues et al., 2020, 2021; Simas et al., 2023).

It is widely recognized that the close relationship between health and education is a fundamental pillar, allowing health professionals to get closer to the school community. In this sense, health education activities in elementary schools aim to promote preventive medicine rather than curative medicine (Auld et al., 2020; Rodrigues et al., 2020; Simas et al., 2023). It is also considered that health practices in the school environment can play a significant role in reducing misinformation and scientific denialism. Therefore, university outreach initiatives represent an excellent opportunity to provide the school community with scientific information on health, including women's health (Rodrigues et al., 2021; Simas et al., 2023).

Research into women's health, especially in the school context, provides a significant tool for raising awareness and reducing disease among young adolescents. It is essential to emphasize that the female body has different characteristics from the male body, which can result in specific diseases and disorders (Rodrigues et al., 2021; Simas et al., 2023; Vegunta et al., 2024). Therefore, it is important that women's health care is holistic and multidimensional from a young age, and the school environment risk a favorable space for developing these practices ("Endometriosis", [S.d.]).

Given this context, since 2018, we have been implementing extension activities focused on health promotion in public schools, emphasizing women's health. These initiatives aim to disseminate comprehensive scientific information since caring for women's health goes beyond gynaecological issues (Rodrigues et al., 2020, 2021; Simas et al., 2023). These outreach activities provide knowledge about prevention, physical, mental, and emotional health care, and family planning, all of which are fundamental aspects for the integral well-being of adolescents. In this way, this study offered women's health practices to adolescents from a public school on the outskirts of Feira de Santana, Bahia, Brazil.

The main objective of this proposal is to develop extension activities in primary education aimed exclusively at girls. This approach is justified based on previous experiences that have shown the need to discuss issues related to women's health with this audience in an exclusively female environment. Many students feel embarrassed by certain attitudes and comments from boys, so it was decided to carry out the project's activities only with girls.

2. Materials and Methods

The ethics committee assessed and approved all the activities in this project, as registered on the Brazil Platform (CAAE-37660720.8.0000.0053). To this end, the students were informed about the project's activities' objectives, risks, and benefits. In addition, the students' guardians signed an Informed Consent Form (ICF) and only took part in the activities once they had been duly authorized.

This study was carried out between August and December 2023 and presents an educational prevention and awareness scheme for young students at the Assis Chateaubriand Integrated Education Centre (CIEAC) in Feira de Santana-Bahia, Brazil. The activities took place in the school library and were aimed exclusively at young girls, as requested by the project participants. They asked for the activities to be exclusively for women, as this made them feel more comfortable discussing specific topics related to the female body.

The project's activities were divided into three stages. In stage 1, students from the Pharmacy course at the State University of Feira de Santana (UEFS) were taught about the different types of contraceptive methods and received training on endometriosis to participate in the research. In addition to the scientific didactic content, the undergraduate students were trained to conduct research with the young participants (Figure 1). This way, a dynamic and relaxed activity was organized with the undergraduate students using party balloons. The balloons were used as part of the dynamic, and keywords related to the project's theme were inserted into each balloon. Thus, the volunteers who participated in the project chose a balloon and popped it to select a topic to discuss in the group. The topics chosen for discussion were women's health, endometriosis, the menstrual cycle, menstrual cramps, pregnancy, and Sexually Transmitted Infections (STIs). The main idea was to demystify these topics, providing reliable information based on scientific data. After this first meeting, specific content and activities were prepared for the target audience.

In stage 2 of the study, a questionnaire was drawn up. The questionnaire was applied to our target audience, i.e., adolescent students at the Assis Chateaubriand Integrated Education Centre (CIEAC) in Feira de Santana-Bahia, Brazil. Firstly, the questionnaire was administered to the young participants. The questionnaire was applied online, preserving the identity of the young people. This stage aimed to analyse the level of knowledge of the young women concerning questions about women's health, whether they use any contraceptive, their knowledge of STIs as well as endometriosis, whether they have any medical follow-up such as a gynaecologist or any other health professional and about sexual activity (Figure 1).

Figure 1 - Scheme of application of the study to promote and raise awareness among students.



Source: Authors.

In this final stage, stage 3 (Figure 1), interactive visits were made to the CIEAC educational centre. The content developed in stage 1 was presented in lectures and discussions with CIEAC students to provide information on prevention and raise awareness about reproductive health, STI prevention, mental and emotional health, menarche and menstrual periods, and breast cancer prevention.

The results from the questionnaire administered to the students were analysed using the Graph Pad Prism 5 program. The primary topics of discussion in this study included: i) knowledge of endometriosis; ii) the use of contraceptive methods; iii) gynaecological follow-up.

3. Results and Discussion

During the project activities, it was possible to identify that some participants were shy, as they were free to contact the project team, who offered individualized support, attending to these students in private, including through social networks. Adolescence is an essential stage of life when social pressures can significantly impact young people's behaviour. Many students face the fear of being bullied and the worry of not fitting into established social patterns. As a result, they may adopt more reserved behaviour as a form of protection. However, this strategy of withdrawal can have negative consequences, contributing to the development of oral communication phobias, intense fear, panic, and, in more severe cases, even depression.

Health education practices in the school environment aim to promote communication between all students, including those with a more withdrawn profile. However, some students still struggle to socialize, even in small groups. The team decided to use social networks as an additional tool to address this issue. Thus, a WhatsApp group was created to facilitate student interaction and engagement. As a result, it was observed that this tool was vital as it brought the students closer to the project team.

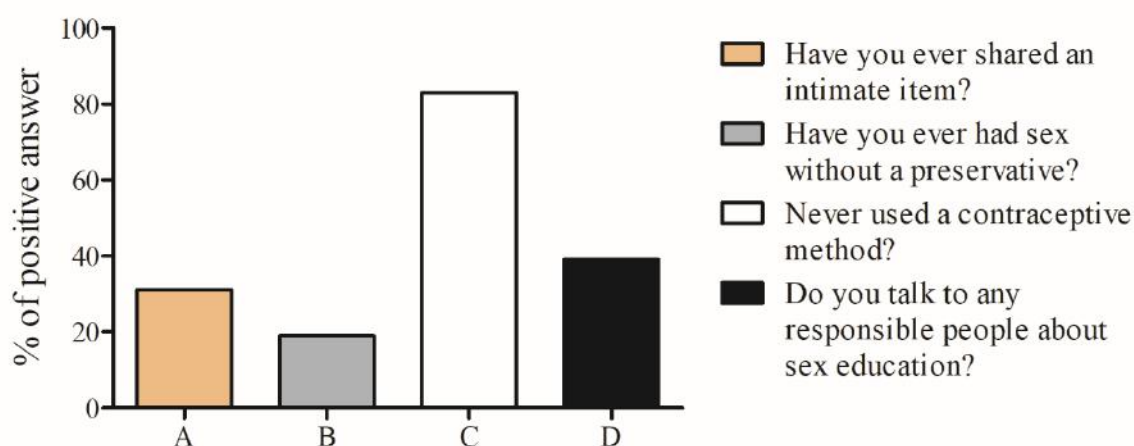
WhatsApp has become an essential tool in modern communication, offering a fast and efficient way of connecting people in real-time. This application is not only a means of instant communication but also a valuable resource for mobile learning. It has become increasingly common for scientific information to be spread via WhatsApp groups, and the team chose this tool to bring the participants closer together and disseminate the scientific information of the extension project developed at the CIEAC.

Although the health practices carried out at school are intended to provide scientific information, it was observed that some students were not allowed to take part with their guardians. These students reported that their guardians feared that the

activities might influence them to start having sex prematurely and address other similar issues. As a result, these students were excluded from the activities. There was, in fact, fear or prejudice towards activities designed exclusively to provide scientific information about women's health. However, the decision of those responsible was accepted, and the students remained in the classroom with the class teacher.

The results of the questionnaires applied to 176 participants showed that 83% of the participants had never used hormonal contraceptive methods, 19% had already had sex without prevention or condoms, 31% admitted to sharing intimate material, and 39% talked to their guardians about sex education, as shown in Figure 2. It is essential to mention that health education practices developed at school should aim to promote changes in collective behaviour, prevent contagion by serious diseases, and avoid severe health consequences.

Figure 2 - Participants' results when asked about the use of contraceptive methods, sharing intimate materials, sex education, and unprotected sexual intercourse.



Source: Authors.

The group's previous studies showed that it is common for adolescents to share personal items, including underwear. The authors highlight the importance of continuing educational activities in schools to promote student awareness and guidance [9]. It is reasonable to point out that interactive meetings at school are essential for identifying gaps in students' basic scientific knowledge. Practices were also conducted to educate participants about the detrimental effects of contraceptives on women's health, even if such methods are essential for controlling the birth rate. Several types of methods are widely available and can be easily found. Nevertheless, the ideal one for each woman should be recommended by a gynaecologist. Contraception methods, such as barrier methods (i.e., male and female condoms), contraceptives (i.e., hormonal and non-hormonal), the tab, morning-after pills, intrauterine devices, and many others, have the potential to cause side effects and adverse effects on a woman's body, which is why it is so essential to be accompanied by a health professional.

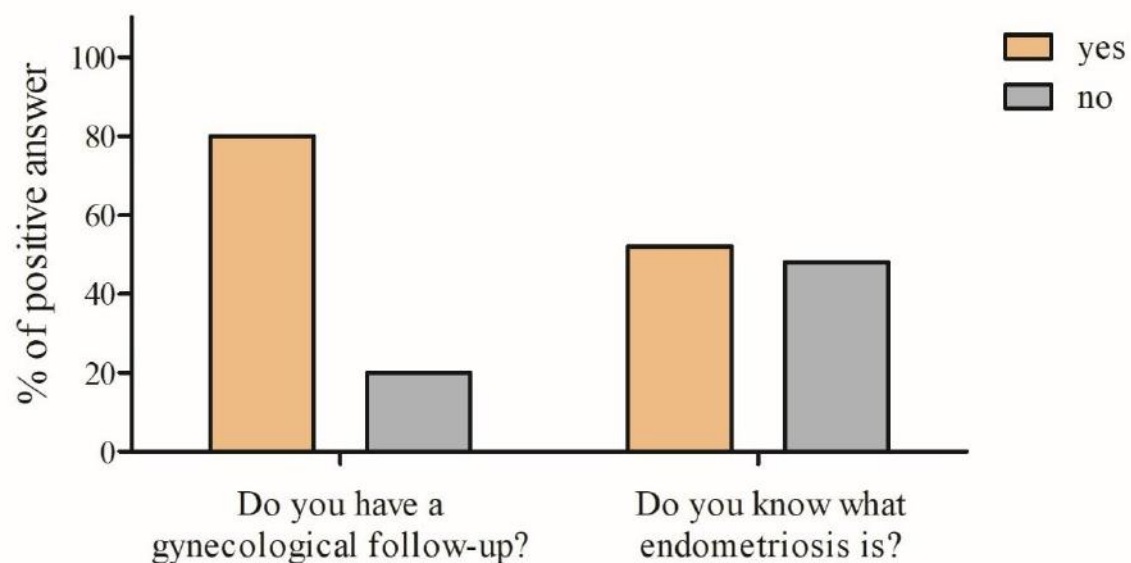
Contraceptive mechanisms, such as contraceptives, can also be used to treat or prevent certain diseases, such as endometriosis. On The other hand, there are reports in the scientific literature that the use of contraceptives, especially oral contraceptives, can increase the risk of developing endometriosis.

The questionnaire's results also showed that 80% of the participants receive gynaecological care (Figure 3). Follow-up by a health professional is of paramount importance for prevention and awareness. Gynaecology is a branch of medicine dedicated to women's health, especially the female reproductive organs. Gynaecological care is recommended at all stages of a

woman's life, from the first menstrual period to the menopause. The focus of gynaecology is the prevention, diagnosis, and treatment of various diseases that can affect women's health, such as cancer, infections, hormonal and menstrual changes, venereal diseases, and even allergies. In addition, it is the gynaecologist who will help monitor the use of contraceptives, as mentioned above.

Figure 3, question 2 also shows that 52% of the participants know what endometriosis is. According to the World Health Organization ("Endometriosis", [S.d.]), 1 in 10 women of reproductive age is affected by endometriosis. In numbers, this equates to more than 190 million individuals worldwide ("Endometriosis", [S.d.]; Hickey; Ballard; Farquhar, 2014). Endometriosis is a severe and chronic disease in which endometrial tissue grows outside the uterus, causing intense pelvic pain and even infertility. Recent studies show that endometriosis affects not only women's physical integrity but also their mental health (Afonso et al., 2021; Della Corte et al., 2020; Giudice, 2010; Hickey; Ballard; Farquhar, 2014). In addition, endometriosis can affect the people around the patient-for example, friends, family, and spouses (Cano-Herrera et al., 2024; Chandel et al., 2023; Fourquet et al., 2010; Petroianu, 2023; Swift et al., 2024).

Figure 3 - Answers given by the adolescents who participated in the questionnaire.



Source: Authors.

Another critical point is that there are statistics on the economic impact of people affected by endometriosis. These impacts can be equivalent to other diseases, such as rheumatoid arthritis, type 2 diabetes, and Crohn's disease (Shafrir et al., 2018; Swift et al., 2024; Zondervan et al., 2018). The prevention of endometriosis is currently unknown (Becker et al., 2021; Zondervan et al., 2018). However, greater awareness, accompanied by early diagnosis and treatment, would be a way of slowing down or stopping the progression of the disease and reducing or even alleviating its symptoms (Becker et al., 2021; Zondervan et al., 2018). In this way, dialog about women's health in schools is important for prevention and raising awareness about diseases that affect a large part of society (Fourquet et al., 2010; Hickey; Ballard; Farquhar, 2014; Zondervan et al., 2018).

4. Conclusion

The main objective of this work was to encourage undergraduate pharmacy students to interact and disseminate scientific information focused exclusively on women's health to young students at a public school. In this sense, the study achieved its objectives:

1. The activities were carried out exclusively for the students in a reserved environment that encouraged participation and involvement. This is an exciting experience for other research and extension groups, as they are embarrassed by students' comments when we open discussions to both sexes.
2. The undergraduate students involved in the extension project had enriching experiences that complemented their academic and practical training.

This is one of the aims of extension projects, i.e., to provide students with opportunities to improve their oratory.

3. A considerable lack of scientific information on women's health was observed in elementary school, as was evident from the many doubts that arose during the activities. The urgent need to strengthen and integrate the promotion of women's health in elementary schools is evident.

In synthesis, the activities have achieved their objectives of encouraging a better understanding of women's health in students and have demonstrated the relevance of improving science education from the earliest stages of their schooling. The experience obtained and the gaps identified will provide a solid basis for future initiatives to improve health education in primary schools continuously.

Author Contributions

Conceptualization: Rodrigues R. C. Methodology: Rodrigues R. C., Silva W. A. C., Souza A. D. P. M., and Mélo A. C. S. Writing-original draft and writing-revision and editing Rodrigues R. C. and Rodrigues M. C. Supervision: Rodrigues R. C. Visualization: Rodrigues R. C. and Rodrigues M. C.

Acknowledgments

Special thanks to all the teachers, staff, and students at CIEAC in Feira de Santana-Bahia, Brazil. Thanks also to the professionals of the Health and Basic Education Program and the students and staff of the UEFS.

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