



CURRICULAR EDUCATION ON SEXUALITY AND ADOLESCENCE FOR UNDERGRADUATE NURSING STUDENTS: A QUASI-EXPERIMENTAL STUDY¹

Jéssica Taynara Moreira Oliveira Pereira*
Rosângela Aparecida Pimenta**
Jaqueline Aparecida Raminelli***
Flávia Lopes Gabani****
Luana da Silva*****
Cristine Freire Faria Silva de Leon*****
Ana Laura Oliveira Barbosa*****

ABSTRACT

Objective: to analyze the knowledge retention of nursing undergraduates before and after attending a curricular unit on sexuality and adolescence. **Method:** quasi-experimental before-and-after study conducted with undergraduates attending a nursing course at a public state university, from October to December 2023. Prior to the development of the curricular unit, all the participants completed a questionnaire consisting of objective questions in five dimensions (construction of the human body, sex, contraceptive methods, sexually transmitted infections, and violence). Subsequently, they participated in theoretical-practical activities and, at the end, answered the same questionnaire. Statistical analysis was performed using the paired Student's *t*-test, with a significance level of 5%. **Results:** Of the 41 participants, 85% were female, with an average age of 21 years, white, unmarried (63%) and Christian (68%). The comparison of the average score of correct answers in the pre- and post-test indicated that there was a significant increase ($p < 0.0001$) after participating in the course unit. **Conclusion:** the undergraduate students learned about sexuality and adolescence after participating in the curricular unit. It was evident that these future professionals were better prepared to deal with adolescents on this topic in healthcare settings.

Keywords: Nursing students. Universities. Sexuality. Adolescent. Sexual education.

INTRODUCTION

Despite being part of human nature and its relationships, the topic of sexuality is still considered a great taboo, imposed socially since the Victorian Era, which was bourgeois and modest⁽¹⁾. It is a complex topic, difficult to approach and scarcely explored with adolescents in family and school environments. Risky sexual behavior among young individuals and adolescents is associated with family, socioeconomic, and school contexts. In Brazil, there were 348,804 births in 2020, 13% of which were to teenage mothers aged between 15 and 19 years^(2,3). In addition to the occurrence of pregnancies in this age group, data from the World Health Organization over the last ten years

have indicated a 64.9% increase in the number of cases of sexually transmitted infections (STIs), highlighting the need to address sexual education with this population⁽⁴⁾.

In 2007, the "Health in School Program" was established by presidential Decree No. 6,286, in an attempt to promote comprehensive education and health within the school environment. This program is seen as a reference for health professionals in order to perform health promotion and disease prevention strategies, especially for adolescents, due to the low demand for health services by this population⁽⁵⁾. Nurses have key roles in programs like this one, as they are at the forefront of healthcare and protagonists in health education actions. Therefore, it is essential that their training includes content

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*Nurse. Master's and PhD in Nursing, Londrina State University (UEL). Londrina, Paraná, Brazil. E-mail: jtmoliveira@gmail.com. ORCID: 0000-0003-2940-3949

**Nurse. CNPq PQ2 Productivity Scholarship. PhD and Teacher of the Department of Nursing, UEL. Londrina, Paraná, Brazil. Email: ropimentaferrari@uel.br. ORCID: 0000-0003-0157-7461

***Bachelor of Statistics. PhD and Teacher of the Department of Statistics, UEL. Londrina, Paraná, Brazil. Email: raminelli@uel.br. ORCID: 0000-0001-9366-6634

****Nurse. PhD and Teacher of the Department of Nursing, UEL. Londrina, Paraná, Brazil. Email: lopesgabani@gmail.com. ORCID: 0000-0002-9442-4896.

*****Nurse. Master's and doctoral student in Nursing, UEL. Londrina, Paraná, Brazil. Email: luana.dasilvaa@uel.br. ORCID: 0000-0002-5245-2725

*****Nurse. Master's student in Nursing, UEL. Londrina, Paraná, Brazil. Email: cristine.freire@uel.br. ORCID: 0009-0003-2751-3113

*****Student. Undergraduate student in Nursing, UEL. Londrina, Paraná, Brazil. Email: ana.oliveira.estudante@uel.br. ORCID: 0009-0006-8325-5034

focused on the topic of sexuality in adolescence⁽⁶⁾.

However, in a documentary research conducted with higher education institutions, it was reinforced that the topic of sexuality had a limited space in the curriculum during the nursing training process⁽⁷⁾. Other authors presented the perception of undergraduate nursing students regarding teaching about sexuality and the report stated that this content had been addressed in few opportunities, contributing to the lack of preparation and insecurity to address the topic in professional practice⁽⁸⁾.

A systematic review performed between 2013 and 2022 showed that the approach to sexuality often occurred intuitively. The responsibility was passed from one teacher to another and often not addressed⁽⁶⁾. Other universities have addressed this topic, though in an extracurricular manner, which ends up limiting the participation of all students. There has also been a piecemeal approach addressing the topic within specific disciplines, however, characterized by superficial and fragile discussions⁽⁹⁾.

Considering the importance of nursing professionals being sensitive to the provision of sexual education to adolescents—as opposed to the lack of teaching on this topic in the training of future nurses—the objective of the present study was to assess knowledge retention of undergraduate nursing students before and after participating in a curricular unit on sexuality and adolescence.

MATERIAL AND METHOD

This is a quantitative, quasi-experimental study, with no randomization. It assessed undergraduates' learning before and after participating in a curricular unit on sexuality and adolescence in a nursing course at a public state university, located in the north of the state of Paraná, Brazil. The study was conducted between October and December 2023 and is part of a research project entitled “Adolescence and youth & exposure to HIV in Brazilian states: epidemiological and geospatial analysis, and development of multiplier preventive actions”, funded by the National Council for Scientific and Technological Development (CNPq).

The undergraduate nursing course at the aforementioned institution considers the students

as the protagonists of knowledge, with the teachers being learning facilitators. The course uses active methodologies based on the problem-based learning method. The curriculum of the Political Pedagogical Project was organized into thematic modules that contained different teaching units in order to apply this pedagogical strategy in practice⁽¹⁰⁾.

One of these units was structured specifically to address sexuality and adolescence with theoretical and practical activities. This unit has been taught since 2000 and developed in the second semester of the second-year undergraduate nursing course, with a workload of 90 hours and the participation of teachers from the areas of health provided to women, children and adolescents⁽¹⁰⁾.

The theoretical content covered in the unit was related to: (1) women's health: anatomy and physiology of the male and female reproductive system; biological determinants and social construction of gender that involve human sexuality in different phases; family/reproductive planning, contraceptive methods recommended by the Ministry of Health, with emphasis on the indications, advantages and disadvantages of each method, in addition to clinical manifestations, prevention and treatment of STIs; and (2) adolescents' health: epidemiological profile, development, growth and physiological changes; eating habits and dysfunctions; emotional, social and cultural aspects, and repercussions on adolescence and family, school and social groups; vulnerability in adolescence regarding pregnancy, abortion and STIs; vulnerability in adolescence regarding the use of legal and illegal drugs; adolescent rights, institutions and social, education and health policies. Subsequently, the students participated in workshops on sexuality, at which time they were subjected to dynamics addressing the theoretical themes by teachers to reproduce them for adolescents in public elementary and high schools.

Participants were selected based on their participation in both phases of the present study (pre- and post-test) using an questionnaire consisting of objective questions for sociodemographic identification (initials of name, age, sex, city of residence, marital status, income, race/ethnicity and religion), followed by statements with the thematic dimensions of the

unit, i.e., construction of the human body, sex, contraceptive methods, STIs and violence, which the students had to select as (a) true, (b) false or (c) I do not know. The questionnaire was previously tested for content and time required for completing it, after which necessary adjustments were made.

The first phase, i.e., before starting the regular activities of the unit (pre-test), took place with all students in a classroom located in the Health Sciences Center, which offers free Wi-Fi. A QR Code was made available to the undergraduate students via the Google Forms platform for completion via mobile devices. The completion time was approximately 15 minutes. Subsequently, the activities of the unit began and, at the end, the students participated in the second stage by responding to the same questionnaire (post-test) using the same platform and a QR Code, completing it via a mobile device.

Descriptive tools such as absolute and relative frequencies, mean, standard deviation and box plots were used in data analysis. To assess the effect of curricular teaching, statistical inference was performed using the paired Student's *t*-test with a significance level of 5%.

The present study was approved by the Research Ethics Committee, under CAAE (Certificate of Submission for Ethical Appraisal) No. 61140022.5.0000.5231, according to opinion

No. 5,681,581. All the participants were informed about the study procedures and the risks and benefits of participating in it. Anonymity was assured and it was emphasized that participation would be voluntary upon signing a free and informed consent form.

RESULTS

Of the 46 undergraduate nursing students enrolled in the second year of the course, 41 responded to the pre- and post-test. The majority of the participants were women (85%), with an average age of 21 years; 63% stated they were white; 63% were unmarried; and 68% were Christian, of which 39% were Catholic and 29% Evangelical.

The overall average score of correct answers in the pre-test was 30 (SD: 3.5), and in the post-test it was 36 (SD: 1.2). Figure 1 illustrates the scores of the participants' correct answers in the two phases of the study. In the post-test, it was observed an increase in the average number of correct answers and a decrease in variability. On the other hand, the statistical test revealed that, after participating in the curricular unit, this increase in the average number of correct answers was significant ($p < 0.0001$). This way, it was possible to conclude that there was evidence of the undergraduate students' knowledge retention.

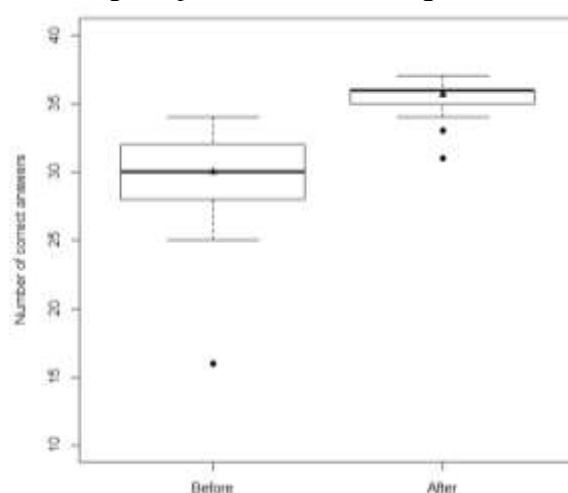


Figure 1. Box plot of the average number of correct answers of undergraduate nursing students, before and after completing the curricular unit, State of Paraná, Brazil, 2023.

Note: (▲) = Average number of correct answers obtained at the two different phases; and (●) participants with discrepant scores with respect to the group average.

The performance of the participants in each thematic dimension of the unit is presented in

Table 1. The comparison of the average score in all thematic dimensions revealed a significant

increase in the post-tests ($p < 0.0001$). The dimension “construction of the human body” presented the highest average score (10.6 ± 0.48), followed by the dimension “contraceptive

methods” (9.7 ± 0.5). On the other hand, “sex” obtained the lowest score of correct answers (3.1 ± 0.3).

Table 1. Comparison of the average score and the paired test by thematic dimension, before and after completing the curricular unit, State of Paraná, Brazil, 2023.

Dimensions	Scores of correct answers		<i>p</i> -value
	Before	After	
Construction of the human body (C)	8.4 (± 1.37)	10.6 (± 0.48)	5.66×10^{-12}
Sex (S)	2.6 (± 0.73)	3.1 (± 0.30)	2.04×10^{-4}
Contraceptive methods (M)	8.9 (± 1.16)	9.7 (± 0.50)	1.48×10^{-4}
Sexually transmitted infections (I)	7.3 (± 1.33)	8.6 (± 1.02)	3.37×10^{-7}
Violence (V)	2.6 (± 0.69)	3.5 (± 0.64)	1.06×10^{-6}

Note: Mean (\pm standard deviation).

DISCUSSION

Teaching about sexuality is still a big taboo for society. Future health professionals should be prepared to deal with the demands and problems related to public health for the entire population. The findings of the present study indicated that the knowledge of second-year undergraduate nursing students who had access to the curricular unit on sexuality and adolescence increased after participating in it.

A study conducted in 2019 with undergraduate medical students from a public university addressing the teaching of sexuality concluded that the approach focused only on biological aspects, excluding fundamental issues for healthcare. The students reported that the training was insufficient and did not prepare them to deal with their future patients. That same study indicated that the implementation of participatory methodologies, promoting the protagonism of everyone for the critical construction of knowledge, was extremely necessary⁽¹¹⁾.

In the present study, undergraduate students were submitted to the problem-based learning method, which, in addition to having the student as a fundamental part of acquiring knowledge, allows successive approximations between theory and practice. Both aspects are necessary, from basic to higher education, so that learning can be concretized, allowing a deeper understanding of experiences related to being a nurse⁽¹²⁾.

The undergraduate students that participated in the present study had an average age of 21

years, a time at which many have already initiated their sexual life, but still have significant doubts. These uncertainties may be associated with poor basic education, since the topic of sexuality has had a limited space for discussion in schools. The results of a study conducted with adolescents in a high school in the Federal District, Brazil, showed that they considered that the topic addressed in workshops on sexuality was important for awareness and prevention, but it was not addressed in the daily curricular activities⁽¹³⁾.

Encouraging the approach to sexuality in schools is a major challenge, since it is necessary to consider an attractive way of approaching adolescents. It should be dynamic and enable the construction of knowledge that meets social and cultural needs and realities, leading adolescents to make safe decisions⁽¹⁴⁾. However, teachers report difficulties and a lack of teacher training to deal with the topic, generating feelings of fear and insecurity when addressing it⁽¹⁵⁾.

In Brazil, since 2015, the National Education Plan has minimized the discussion on this topic in school environments, with it being included only in the 8th grade of elementary school, in the subject “Science”⁽¹⁶⁾. This is an opposite situation in comparison to what occurs in other countries, such as Portugal, France and Germany, where the approach to sexual education is required by law⁽¹⁷⁾.

During the undergraduate nursing course, issues involving sexuality are usually addressed in an occasional, complementary or isolated manner⁽¹⁸⁾, which makes it difficult for future health professionals to gain a deeper theoretical

and critical understanding. In addition, this aspect makes it difficult to provide future services to different audiences, harming healthcare, since nurses play an essential role in education, promotion and prevention of pregnancy and STIs⁽¹⁹⁾.

When STIs were addressed in the present study, there was a significant increase in correct answers in the post-test. In a study conducted in 2022, researchers found that prior knowledge about STIs played an important role in the education and training of future health professionals. It was observed that discussions in family settings and control exercised by religion could influence the acquisition of knowledge by undergraduates⁽²⁰⁾. In the present study, 68% declared themselves to be Christians, with Catholic and Evangelical religions, which may have influenced the level of information acquired prior to completing the unit on sexuality.

In a survey conducted with undergraduate nursing students from another institution, undergraduates did not feel prepared to deal with different sexual genders, since sexuality during the undergraduate course had been addressed occasionally and punctually, making theoretical and critical deepening difficult. In addition, in the family context, the subject had been rarely addressed, due to the taboo and little openness to dialogue⁽²¹⁾. In the present study, the questions addressed in the dimension sex were those that had the lowest number of correct answers between pre- and post-test, demonstrating little contact with the topic.

The issue of sexual violence and the role of health professionals represent a complex social

and public health problem that should be addressed at universities in order to prepare undergraduates to support the victims and combat violence. Although the learning of undergraduates in the present study increased when comparing pre- and post-test, it was lower when compared to the dimensions of the human body and STIs. Therefore, it is a topic that should be addressed throughout the course, given its complexity and the paradigms that need to be overcome. With the aim of reducing public health problems, it is important to address this issue from primary school onwards, for teachers and students, university teachers and future health professionals, since they are key players in health promotion and disease prevention for all age groups, including young individuals and adolescents.

CONCLUSION

The future health professionals at the educational institution under study were more prepared to deal with adolescents, as there was a significant increase in correct answers in all dimensions of knowledge when comparing pre- and post-tests. This fact characterizes a training that addresses sexuality in its broadest spheres and directs future nurses towards better professional practice in different healthcare settings. However, the findings of this intervention do not apply to the general context of training future nursing professionals at different institutions, since the present study was conducted at only one higher education institution.

ENSINO CURRICULAR SOBRE SEXUALIDADE E ADOLESCÊNCIA PARA GRADUANDOS DE ENFERMAGEM: ESTUDO QUASE EXPERIMENTAL

RESUMO

Objetivo: analisar a retenção do conhecimento de graduandos de Enfermagem antes e após a participação na unidade curricular sobre sexualidade e adolescência. **Método:** estudo quase experimental do tipo antes e depois com graduandos do 2º ano do curso de Enfermagem de uma universidade pública estadual, nos meses de outubro a dezembro de 2023. Todos preencheram um instrumento constituído por questões do tipo objetivas em cinco dimensões (construção do corpo humano, gênero, métodos contraceptivos, infecções sexualmente transmissíveis e violência), previamente ao desenvolvimento da unidade curricular. Em seguida, participaram das atividades teórico-práticas e, ao término, responderam ao mesmo instrumento. A análise estatística foi realizada por meio do teste t-Student pareado, nível de significância de 5%. **Resultados:** Dos 41 participantes, 85% do sexo feminino, idade média de 21 anos, cor branca, sem parceiros (63%) e cristãos (68%). Na comparação entre pontuação média de acertos, pré e pós-teste, houve um aumento significativo ($p < 0,0001$) após a participação na unidade curricular. **Conclusão:** houve aprendizagem entre os graduandos sobre sexualidade e adolescência

após a participação na unidade curricular, entende-se que esses futuros profissionais se encontram melhor preparados para lidar com o público adolescente sobre a temática nos cenários assistenciais.

Palavras-chave: Estudantes de enfermagem. Universidades. Sexualidade. Adolescente. Educação sexual.

ENSEÑANZA CURRICULAR SOBRE SEXUALIDAD Y ADOLESCENCIA PARA GRADUANDOS EN ENFERMERÍA: ESTUDIO CUASIEXPERIMENTAL

RESUMEN

Objetivo: analizar la asimilación del conocimiento de graduandos en Enfermería antes y después de la participación en la unidad curricular sobre sexualidad y adolescencia. **Método:** estudio cuasiexperimental del tipo antes y después con graduandos de 2º año del curso de Enfermería de una universidad pública estatal, en los meses de octubre a diciembre de 2023. Todos rellenaron un instrumento constituido por preguntas del tipo objetivas en cinco dimensiones (construcción del cuerpo humano, género, métodos anticonceptivos, infecciones de transmisión sexual y violencia), previamente al desarrollo de la unidad curricular. Luego, participaron de las actividades teórico-prácticas y, al final, respondieron al mismo instrumento. El análisis estadístico fue realizado a través de la prueba T de *Student* pareada, nivel de significancia de 5%. **Resultados:** de los 41 participantes, 85% del sexo femenino, promedio de edad 21 años, color blanco, sin pareja (63%) y cristianos (68%). En la comparación entre promedio de aciertos, pre y post prueba, hubo un aumento significativo ($p < 0,0001$) después de la participación en la unidad curricular. **Conclusión:** hubo aprendizaje entre los graduandos sobre sexualidad y adolescencia después de la participación en la unidad curricular, se entiende que estos futuros profesionales están mejor preparados para tratar con el público adolescente sobre la temática en los escenarios asistenciales.

Palabras clave Estudiantes de enfermería. Universidades. Sexualidad. Adolescente. Educación sexual.

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Corresponding author: Jéssica Taynara Moreira Oliveira Pereira. Rua Eurico Hummig 404, ap 1403. Gleba Fazenda Palhano. 86050-464. 43 99155-9001. jetmoliveira@gmail.com

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