









Perceptions of nursing students on the use of a board game in health education for the prevention of cervical cancer

Percepções de acadêmicos de enfermagem sobre o uso de um jogo de tabuleiro na educação em saúde para prevenção do câncer do colo do útero

Percepciones de los estudiantes de enfermería sobre el uso de un juego de mesa en la educación para la salud para la prevención del cáncer de cuello uterino

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ABSTRACT

Objective: To understand the perception of nursing students regarding the use of a board game as a health education strategy in the prevention of cervical cancer.
Methodology: An exploratory, descriptive study with a qualitative approach, conducted with 45 nursing undergraduate students from a federal university. Data collection included the application of a sociodemographic questionnaire, participation in a game session, and the application of the Free Word Association Technique. Data analysis was performed using descriptive statistics, similarity analysis, and word cloud generation with IRaMuTeQ® software, complemented by thematic content analysis.
Results: The students associated the game with pedagogical and playful dimensions, highlighting terms such as learning, knowledge, fun, and cancer. The thematic categories revealed playfulness, education, prevention, socialization, and emotions.
Conclusion: The board game is a promising tool that integrates playfulness and science, promoting learning and critical training in nursing focused on disease prevention.

DESCRIPTORS:

Play and Playthings; Health Education; Students, Nursing; Uterine Cervical Neoplasms.

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RESUMO

Objetivo: Compreender a percepção de acadêmicos de enfermagem sobre o uso de um jogo de tabuleiro como estratégia de educação em saúde na prevenção do câncer do colo do útero. **Metodologia:** Estudo exploratório, descritivo, de abordagem qualitativa, realizado com 45 acadêmicos de enfermagem de uma universidade federal. A coleta dos dados ocorreu com a aplicação de questionário sociodemográfico, participação em uma rodada do jogo e aplicação da Técnica de Associação Livre de Palavras. A análise ocorreu por meio de estatística descritiva, análise de similitude e nuvem de palavras no software IRaMuTeQ®, complementadas pela análise de conteúdo temática. **Resultados:** Os acadêmicos associaram o jogo às dimensões pedagógica e lúdica, destacando termos como aprendizado, conhecimento, diversão e câncer. As categorias temáticas evidenciaram ludicidade, educação, prevenção, socialização e emoções. **Conclusão:** O jogo de tabuleiro é ferramenta promissora, que integra ludicidade e ciência favorecendo a aprendizagem e a formação crítica em enfermagem voltada à prevenção da doença.

DESCRIPTORIOS:

Brincadeiras e Brinquedos; Educação em Saúde; Estudantes de Enfermagem; Neoplasias do Colo do Útero.

RESUMEN

Objetivo: Comprender la percepción de los estudiantes de enfermería sobre el uso de un juego de mesa como estrategia de educación para la salud en la prevención del cáncer de cuello uterino. **Método:** Estudio exploratorio, descriptivo, con enfoque cualitativo, realizado con 45 estudiantes de enfermería de una universidad federal. La recolección de datos incluyó la aplicación de un cuestionario sociodemográfico, la participación en una ronda del juego y la aplicación de la Técnica de Asociación Libre de Palabras. El análisis de los datos se realizó mediante estadística descriptiva, análisis de similitud y nube de palabras utilizando el software IRaMuTeQ®, complementados por el análisis de contenido temático. **Resultados:** Los estudiantes asociaron el juego con dimensiones pedagógicas y lúdicas, destacando términos como aprendizaje, conocimiento, diversión y cáncer. Las categorías temáticas evidenciaron ludicidad, educación, prevención, socialización y emociones. **Conclusión:** El juego de mesa es una herramienta prometedora que integra ludicidad y ciencia, favoreciendo el aprendizaje y la formación crítica en enfermería orientada a la prevención de la enfermedad.

DESCRIPTORIOS:

Juego e Implementos de Juego; Educación en Salud; Estudiantes de Enfermería; Neoplasias del Cuello Uterino.

INTRODUCTION

Cervical cancer (CC) is the third most common cancer among Brazilian women (570,000/year), excluding non-melanoma skin tumors. In the state of Pará, the disease presents itself as a serious public health problem, with an estimated 830 new cases per year and being the leading cause of cancer death among women⁽¹⁾. Because it is a preventable cancer, prevention is a priority and should be carried out mainly within the scope of Primary Health Care (PHC)⁽²⁾.

However, actions outside Basic Health Units (BHU) are poorly encouraged, especially to reach adolescents and young adults in schools and colleges. This population is not included in the screening policy of the Ministry of Health (MH), but is already experiencing sexual activity and is susceptible to infection by the Human Papillomavirus (HPV)⁽²⁾.

The CC screening policy highlights the importance of nurses in primary prevention (HPV vaccination and health education) and secondary prevention (preventive care and molecular testing)⁽²⁾. Therefore, it is essential that academic training in nursing enables the development of skills related to the prevention and control of this disease. However, studies point to weaknesses in the knowledge of nursing students regarding CC prevention and care strategies focused on women's health⁽³⁻⁵⁾.

Moreover, higher education is still permeated by traditional practices in which nursing students assume a passive posture in their learning process⁽⁶⁾. The National Curriculum Guidelines (DCN) for Nursing foresee the training of critical and reflective professionals based on the precepts of the Unified Health System (UHS), with the use of active methodology. Therefore, the adoption of innovative methodologies that favor the protagonism of nursing students and promote meaningful learning is relevant⁽⁷⁾.

Unlike traditional approaches, educational technologies such as board games allow learning to occur in an interactive, participatory and contextualized way⁽⁸⁾. Internationally, game-based approaches have demonstrated potential to increase motivation, engagement, knowledge retention and skills development among health science students. In addition, board games are low cost and independent of advanced technological resources, making them a viable alternative for different educational contexts^(9,10).

Despite the growing interest in the use of games in health education, studies investigating nursing students' perceptions of the use of educational games aimed at preventing cervical cancer are still scarce. There is also limited scientific production related to student experience and the potential of these strategies in teaching women's health^(9,11).

In this context, considering that nursing students are professionals in training and a sexually active population, the guiding question of this research is: What is the perception of nursing students regarding the use of a board game as a health education strategy in the prevention of cervical cancer?

OBJECTIVE

To understand the perception of nursing students regarding the use of a board game as a health education strategy in the prevention of cervical cancer.

METHODOLOGY

Study design

This is an exploratory and descriptive study, developed from a qualitative approach, based on the

COREQ checklist. The research was based on the Theory of Social Representations⁽¹²⁾, considering that academics' perceptions of educational games are socially constructed and expressed through shared symbolic content.

Population

The target audience consisted of nursing students from a public university, who were recruited non-probabilistically and by convenience. The activity was publicized through the institution's communication channels. 51 people attended on the previously scheduled days and were subjected to inclusion and exclusion criteria; 6 of these students withdrew due to the need to return to institutional activities. The final sample consisted of 45 nursing students.

Inclusion and exclusion criteria

The inclusion criteria were: being at least 18 years old, being regularly enrolled from the fourth semester of the course onwards (the period in which the subject matter is introduced), and being available to participate in the research. Those who did not complete their participation in the game round were excluded.

Study protocol

Data collection took place over five days, between March and July 2025, at a federal university, in the institution's hall. In order to ensure methodological rigor in the qualitative research, strategies related to the credibility and confirmability of the data were adopted, including prior training of the researchers and standardization of data collection. Thus, the data collection encompassed three sequential moments.

In the first moment, the research was presented, including its objectives, procedures, and collection of the signed Informed Consent Form (ICF) by eligible participants. The sociodemographic and academic questionnaire was applied to characterize the sample regarding personal and educational variables (sex, age, semester, gender, and participation in educational activities with games), made available through a QR Code that directed participants to its electronic completion on the Google Forms platform.

In the second moment, the board game was applied as a didactic resource to address different aspects related to CC. Each round of the game lasted an average of 30 minutes and involved three to six pairs or trios in order to encourage peer and group discussion among the students. The dynamics were mediated by two researchers (a nursing undergraduate and a master's student in nursing), one in each round, who provided guidance on the rules, clarified doubts, and encouraged the equitable participation of all players. During the study period, the undergraduate was a member of the Scientific Initiation

Scholarship Program, and the master's student was part of the research group that focused on the study of sexually transmitted infections in the Amazon. Both received training to use the game and apply the data collection methods in order to avoid research bias.

Concerning the board game, it is noteworthy that it was structured in three sequential phases referring to the competencies of nurses in primary, secondary, and tertiary care regarding the prevention of CC. The highest score obtained on the die determined the player who started the game, followed by a clockwise direction thereafter. The game contained 97 cards, distributed between direct questions about the theme of CC and action cards, which proposed problem situations and allowed for advancement or regression in spaces.

In the final stage of data collection, the Free Word Association Technique (FWAT) was applied, which consists of asking participants to spontaneously and quickly recall words that come to mind in response to an inducing stimulus, allowing the identification of central and peripheral elements of social representations about the investigated topic⁽¹³⁾. In this stage, the inducing stimulus was the following question: "What words come to mind about using the board game to learn about cervical cancer?".

Next, each participant was asked to anonymously record, on a card, the first five words that came to mind in response to the proposed question. For this activity, approximately two minutes were allowed, ensuring the spontaneity of the recalls.

Analysis of results and statistics

The data obtained through the questionnaire were organized and tabulated in a Microsoft Excel® spreadsheet. Subsequently, they were subjected to descriptive statistical analysis, with the calculation of absolute and relative frequencies for categorical variables, as well as measures of central tendency and dispersion for quantitative variables.

The words evoked in the application of the FWAT were initially transcribed faithfully and organized in an electronic spreadsheet in Microsoft Excel®, which made it possible to tabulate and count the evocations to verify the absolute and relative frequency of each term. Subsequently, the evocations were subjected to thematic content analysis, following the steps of pre-analysis, exploration of the material and treatment of the results obtained, with subsequent inferential interpretation⁽¹⁴⁾. This process made it possible to organize the contents into thematic and semantic axes related to the academics' perceptions about the use of the educational game. The analysis was conducted by two researchers independently, with the divergences being discussed until consensus, aiming to increase the interpretative reliability of the findings.

Furthermore, the set of evocations was structured into a textual corpus and exported in a format compatible with the IRaMuTeQ® software (*Interface de R pour les Analyses Multidimensionnelles de*

Textes et de Questionnaires), which allows for different modes of textual statistics exploration⁽¹⁵⁾, where similarity analysis was conducted, aimed at identifying the structure and links between the terms evoked in a lemmatized way⁽¹⁶⁾.

Ethical aspects

The study was conducted in accordance with current ethical guidelines and was approved by the Research Ethics Committee of the Federal University of Pará under Opinion N. 8.083.074 and CAAE No. 93248625.8.0000.0018.

RESULTS

The study included 45 nursing students, predominantly female (57.8%), with an average age between 21 and 23 years (55.6%), cisgender (100%), and enrolled between the 4th and 5th semesters (68.9%). It was observed that 64.4% had never participated in initiatives of this nature, while 35.6% reported having had similar experiences. Table 1 below shows the data.

Table 1. Sociodemographic and academic characterization of the study participants. Belém, PA, Brazil, 2025. (n=45)

Variables	Categories	n (%)
Sex	Female	26 (57.8)
	Male	19 (42.2)
Gender	Cisgender	45 (100)
Age	18-20	10 (22.2)
	21-23	25 (55.6)
	24-26	8 (17.8)
	≥ 27	2 (4.4)
Academic semester	4 - 5	31 (68.9)
	6 - 7	12 (26.7)
	8 - 10	2 (4.4)
Prior participation in health education activities using games.	Yes	16 (35.6)
	No	29 (64.4)

The application of FWAT resulted in 225 evocations, with a total of 83 different words. In order to highlight the terms that emerged with greater recurrence and readiness, an absolute and relative frequency analysis was performed, which showed the frequency of the evoked terms: learning (22), knowledge (16), fun (16), cancer (15), education (12), game (10), health (9), competition (8), prevention (6) and interaction (6) presented in Table 2. The remaining terms (105) showed dispersed frequencies, but contributed to the composition of the corpus analyzed in subsequent stages.

Table 2. Main words evoked by participants according to FWAT. Belém, PA, Brazil, 2025.

Words evoked	n (%)
Learning	22 (9.8)
Fun	16 (7.1)
Knowledge	16 (7.1)
Cancer	15 (6.7)
Education	12 (4.4)
Game	10 (5.3)
Health	9 (4.4)
Competition	8 (4.0)
Prevention	6 (2.7)
Interaction	6 (2.7)

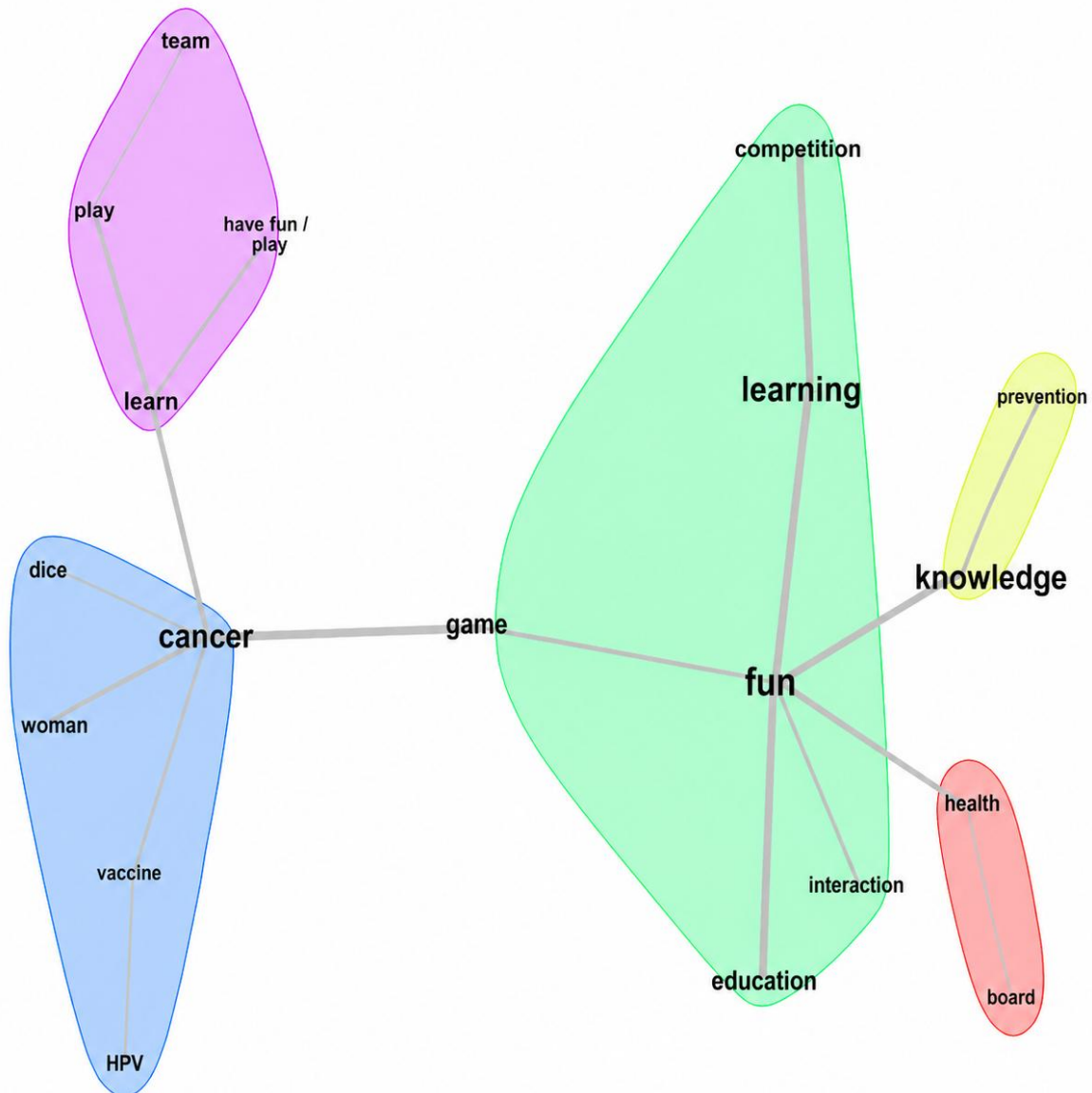
To deepen this understanding, the evocations were categorized according to the Thematic Content Analysis technique⁽¹⁵⁾, grouped by semantic similarity into five thematic categories that structure the perceptions of nursing academics regarding the use of the board game, namely: Playfulness, Education, Health, Socialization and Emotions.

The Playfulness category expressed the appreciation of aspects related to pleasure, dynamism and engagement during the activity. The Education category showed that participants recognized the game as a tool to facilitate the construction of knowledge, associating it with learning and understanding the content.

The Health category demonstrated that students were able to relate the playful experience to the scientific content covered, especially those linked to the prevention of cervical cancer, HPV vaccination and screening. In turn, the Socialization category revealed that the game favored interaction, cooperation and shared learning among the participants. Finally, the Emotions category showed that the experience aroused feelings related to challenge, curiosity and enthusiasm, indicating affective involvement with the educational process.

To reinforce the structure of these perceptions, a similarity analysis was carried out, represented in Figure 1, which highlighted the structural organization of the evocations, emphasizing the connections between the most recurrent terms. These core groups allowed the identification of two large lexical clusters, which concentrate central connections and reveal the coexistence of cognitive and playful dimensions in the participants' perception of the board game.

Figure 1. Network of similarities of words evoked by participants, operationalized by the IraMuTeQ® software.



The words "learning," "knowledge," "fun," "game," and "cancer" constituted the main lexical nuclei of the network, presenting a greater number of connections with the other terms evoked by the participants.

The centrality of these elements shows that the academics associated the board game simultaneously with the pedagogical and playful dimensions of the educational experience. The strong connection between the terms "learning" and "knowledge" suggests that the resource was perceived as facilitating the construction of knowledge, favoring the assimilation of content related to cancer prevention. At the same time, the presence of terms such as "fun," "competition," and "interaction" indicates that the activity was understood as a dynamic, participatory, and motivating experience, capable of stimulating

greater student involvement in the learning process.

The lexical organization also revealed similarities between the terms "cancer," "prevention," "HPV," "vaccine," and "health," demonstrating that participants were able to relate the playful experience to the scientific content addressed during the activity. This finding suggests that the game favored the articulation between theoretical knowledge and health education, contributing to bringing complex themes of academic training closer in a more accessible and interactive way.

Moreover, the coexistence of elements related to scientific content and playfulness shows that the game was not perceived only as a recreational activity, but as an educational tool capable of integrating emotion, socialization, and knowledge construction. Thus, the network of similarity reinforces that the experience provided by the game mobilized cognitive, affective, and relational dimensions in the teaching-learning process of nursing students.

DISCUSSION

The sociodemographic assessment allowed us to infer a greater participation of female participants in the sample, a result that follows the trend indicated by the literature, of a greater predominance of women in the undergraduate nursing course and demonstrates the inclusion of young people in undergraduate studies. Additionally, it reveals a greater participation of students from the initial semesters, probably due to the students who make up the advanced semesters being more present in the practice scenarios⁽¹⁷⁻¹⁹⁾.

Furthermore, 64.4% had never participated in initiatives of this nature, while 35.6% reported having already experienced similar experiences. This finding shows that, despite the potential of active methodologies, the use of board games as a pedagogical strategy is not yet a consolidated practice in the daily life of nursing education at the institution where the study was carried out⁽²⁰⁾.

In light of the Theory of Social Representations⁽¹²⁾, it is observed that the students constructed positive representations about the educational game, simultaneously associating it with learning, playfulness and social interaction. The recurrence of terms such as "learning", "knowledge", "fun" and "interaction" suggests that the resource has been socially signified as a strategy capable of making the content more accessible, participatory and dynamic.

In this context, the use of games is considered a pedagogical resource contributes significantly to the appropriation of content, since it transforms the learning process into a more dynamic, participatory and applied experience. It is also important that teachers and educational institutions invest in the development of playful strategies, capable of stimulating student protagonism and strengthening active methodologies, favoring the retention of knowledge and the critical training of future professionals^(7,21).

This set of evocations showed that academics associated the board game with both the

pedagogical dimension, recognizing it as a resource capable of promoting learning and knowledge construction, and the playful dimension, expressed in evocations of fun, play and competition, which refer to the interactive and motivating character of the experience. At the same time, terms such as cancer, health and prevention reinforce the link between the game and its thematic content, revealing that the activity enabled the articulation between scientific knowledge and educational practice in health⁽²²⁻²³⁾.

These findings corroborate the literature that points to educational games as active methodologies that promote engagement, meaningful learning, and content retention, confirming their strategic potential for nursing education and the training of critical and reflective professionals ⁽²⁴⁻²⁶⁾. However, unlike studies that address games only as content review tools, the results of this investigation suggest that the game was also perceived as a space for social interaction and emotional involvement, indicating expanded potential beyond the transmission of information.

In turn, the individualized assessment of the terms and frequency of evocation allowed students to understand the playful-educational scope of the technology. In the Health category, 49 evocations were identified, such as assistance, cytopathology, HPV, vaccine, and treatment, revealing the direct association of the game with its central theme, focused on the prevention of CC. This finding demonstrates that educational technology managed to mobilize essential content from health practice, in line with evidence that educational strategies favor the expansion of student knowledge on the subject ⁽²⁷⁾.

The Playfulness category concentrated 56 evocations, including terms such as play, cards, competition, dice, fun and playing, highlighting the appreciation of the dynamic and motivating character of the game. This finding is similar to that found by a literature study, which points out that educational games arouse greater interest and engagement from students, reinforcing the idea that the playful dimension is a facilitator of learning⁽²⁴⁾.

The Education category gathered 74 evocations, with emphasis on knowledge, learning, studying and teaching, confirming the perception of the resource as a teaching-learning strategy, reinforcing that active methodologies favor the critical construction of knowledge and contribute to better retention of content in health, expanding the effectiveness of the teaching-learning process⁽²⁸⁾.

Socialization totaled 24 evocations, including interaction, teamwork, cooperation, and friendship, highlighting the game's potential to stimulate teamwork and collaborative learning. This finding is similar to that observed by a study in the literature, which highlighted the relevance of games for the development of interpersonal skills in health education⁽²⁶⁾.

Finally, the Emotions category brought together 22 evocations, such as joy, challenge, difficulty, and doubt, highlighting the affective dimension mobilized by the experience. According to the literature consulted, the integration between cognition and emotion is one of the main advantages of playful

strategies, as it favors more meaningful and lasting learning ⁽²⁹⁾. In this context, feelings such as doubt and challenge should not be understood as negative aspects of the educational process, but as components capable of boosting critical thinking and knowledge construction. The need to answer questions, discuss possibilities with colleagues, and deal with problem situations favored reflection processes and active search for answers, contributing to greater cognitive involvement during the activity⁽³⁰⁾.

In general, the predominance of the categories Playfulness and Education confirms that the game was perceived not only as a recreational resource, but as a pedagogical tool, while Prevention reinforces its contribution to the theoretical content of the game. Socialization and Emotions broaden the scope of the experience, showing that games also promote bonds, cooperation and emotional involvement, in line with the literature on active methodologies⁽²⁵⁾.

In a complementary way, the similarity analysis allowed the organization of the central nodes, terms whose recurrence of citations denoted greater lexical importance. The individual evaluation of the clusters showed the groupings around the terms, such as the word "cancer", which brings together terms such as woman, HPV, vaccine, dice, play and games, indicating that the students directly associated the pedagogical resource with the thematic content of the game, especially in relation to screening, immunization and the link with women's health. This lexical organization confirms that the game fulfilled its function of mediating learning about clinical and preventive aspects, which converges with findings from other studies that demonstrate the potential of games in bringing complex content closer to educational practice in health^(25,27).

In addition, the presence of terms such as cancer, prevention, HPV and vaccine confirms that the game fulfilled its role of anchoring learning around CC, which is close to studies that observed that educational strategies in nursing help in approaching complex concepts. On the other hand, the recurrence of words such as fun, game and interaction suggests the appreciation of collective and collaborative experience, in line with a study, which pointed out that games are useful as instruments to develop not only technical knowledge, but also relational skills essential to health care^(26,28).

Study Limitations

A study limitation concerns the sample size and context, as they do not allow for an assessment of the overall perception of nursing students, but only of the participants. Therefore, the need to diversify the environment and expand the sample size is highlighted in order to elucidate the reported benefits.

Contributions for the Nursing Area, Health or Public Policy

The study contributed by highlighting that board games are promising educational technologies

in nursing education, promoting participatory and playful learning. Furthermore, it revealed that games are a strategy for discussing complex topics such as cervical cancer in a light and dynamic way.

CONCLUSION

This study explored the perceptions of nursing students regarding the use of a board game in health education about cervical cancer, revealing that participants simultaneously associated it with pedagogical and playful dimensions. Thus, the game proved to be a promising pedagogical tool, capable of enriching the nursing training process, overcoming limitations of traditional teaching, and stimulating the active participation of students, strengthening their critical and reflective thinking.

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