



A QUALITATIVE STUDY TO ASSESS THE EXPERIENCES REGARDING ESCAPE ROOMS AS A METHOD OF LEARNING STRATEGY AMONG NURSING STUDENTS FROM A SELECTED COLLEGE OF NURSING, BANGALORE.

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Abstract:

Background: Game-based learning is an instructional approach that incorporates game elements to enhance student engagement and learning. Escape rooms, involving time-bound problem-solving in themed scenarios, have gained popularity globally. However, their use in nursing education, particularly in India, remains limited.

Objective: To explore nursing students' experiences of using escape rooms as a learning strategy.

Methods: A qualitative phenomenological study was conducted among 60 first-semester B.Sc. Nursing students selected through purposive sampling. Participants included 39 females (65%) and 21 males (35%) with a mean age of 18.98 ± 2.61 years. Students were initially divided into 10 groups for the escape room activity, after which one student from each group was randomly selected and regrouped into six focus groups. Each focus group discussion lasted approximately 90 minutes, guided by an open-ended questionnaire, and continued until data saturation was reached in the third session. Discussions were audio-recorded, transcribed verbatim, and analysed using NVivo version 14 through interpretative phenomenological analysis.

Results: Six main themes emerged: learning outcomes, engagement and enjoyment, innovative learning approaches, interpersonal relationships, critical thinking and decision-making, and educational implications. Subthemes included skill development, knowledge acquisition, memory retention, motivation, communication, collaboration, teamwork, and real-time decision-making. Students reported that escape rooms enhanced learning, improved communication and teamwork, and stimulated critical thinking.

Conclusion: Escape rooms can be an effective pedagogical tool in nursing education, promoting engagement, enjoyment, and skill development while fostering interpersonal and decision-making skills. Incorporating such activities into the nursing curriculum could strengthen learning outcomes and curriculum quality.

Keywords: Escape room, game-based learning, engagement, critical thinking, teamwork, nursing education.

INTRODUCTION

Teaching methods are constantly evolving to enhance learning outcomes.¹ Emerging educational approaches strive to increase students' interest and engagement, actively involving them in the learning process to enhance knowledge acquisition.²

New educational methods aim to boost student engagement and facilitate knowledge acquisition through active learning approaches. These techniques seek to cultivate greater student interest, commitment, and participation in the learning process.³

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The rapid advancements in nursing education have led to substantial changes, favouring a shift towards more learner-centered activities. This approach places the student's needs at the forefront of educational delivery. Recent studies have integrated game-based learning methods that prioritize student engagement and participation.⁴

The goal is to boost student motivation to reduce stress and enhance knowledge and skill retention. Numerous studies have shown that learner-centered instruction identifies students' strengths and areas for growth in addition to giving them greater motivation to advance their professional practices and make better decisions.⁵

Among the alternative approaches diverging from traditional lecture-style classes are flipped learning, problem-based learning, and gamification.⁶ Problem-based learning begins with a problem, prompting students to explore solutions. Gamification, the application of gaming principles to academic content, is becoming more captivating as a method to inspire student motivation.⁷ Game-based learning, which uses games as a tool to motivate and engage students in the learning process, is one of the methodologies diverging from traditional lecture-style classes.⁸

Understanding how gamification and game-based learning vary from one another is essential.

Game-based learning uses games in education, while gamification adds game elements to learning. It enhances engagement through active learning, where students participate in meaningful activities, such as escape room games, solving problems within a time limit. This pedagogical tool boosts learning efficiency by requiring collaboration and problem-solving. Educational escape rooms exemplify active learning through diverse puzzles that stimulate students' minds.¹⁰

Several initiatives are exploring the impact of games and gamification on nursing education. Due to their ability to engage students, foster motivation, and promote active learning and critical thinking, games are increasingly viewed as valuable tools for learning. Studies evaluating game use in nursing, including Nursopardy, 3D Game Lab, Rezzly, and PICO, have reported positive outcomes in terms of student satisfaction, motivation, and learning.⁸

Today's nursing students, particularly Millennials, are accustomed to a technology-driven world and prefer interactive learning over traditional lecture-based methods. To engage these tech-savvy students, educators must incorporate active participation and games, which promote deeper learning. Dale's (1969) research shows that combining verbal instruction with hands-on activities enhances retention.¹¹

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An escape room is a game where a small group of people gets locked in a room and they have to work together to find a way out before time runs out. Usually, the goal is to find a specific object hidden in the room. To escape, players have to solve puzzles, find clues, and use their critical thinking, reasoning, and logic to unlock doors. Generally, if the group requires any hints to escape in time, these are provided.^{11,12}

Escape rooms, introduced in education in 2017, use gamification and game-based learning to engage students. By solving puzzles within a scenario, students develop problem-solving, creativity, and teamwork skills. This active learning method enhances both technical and social skills, offering a more engaging and effective alternative to traditional learning.⁹

Due to the growing need for improved education, teaching methods are evolving to enhance students' learning experiences, focusing on greater engagement and effectiveness. New approaches, such as flipped learning, problem-based learning, and game-based learning, promote active participation and motivation. The escape room has become one of the most popular game-based learning tools in health sciences education.¹³

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The usage of escape rooms in health sciences education is expanding, as was already mentioned. The escape room has been utilized by emergency medicine, radiology, and other medical residents medical surgical nursing students, and pharmacy students. In terms of satisfaction, learning, applying information, and work and communication skills, all of these studies reveal successful outcomes.^{13,14}

Escape rooms take place in fictional settings, where groups of six to eight participants have 45 minutes to complete tasks and exit. They receive one free clue, with additional clues costing one minute each. After the activity, participants are interviewed, and their responses are analyzed to explore escape rooms as a learning strategy for nursing students. Despite their potential, escape rooms are underutilized in Indian nursing education. Research is needed to explore how this innovative approach can be integrated into Indian nursing curricula to enhance student learning and clinical preparedness.

OBJECTIVES OF THE STUDY

To explore the experiences regarding escape rooms as a method of learning strategy among nursing students.

RESEARCH METHODOLOGY

In this study, a qualitative research approach was used to explore the experiences of nursing students regarding escape rooms as a learning strategy. The research design chosen was phenomenological, which aimed to understand the participants' lived experiences. The population consisted of first-semester B.Sc. nursing students at Narayana Hrudayalaya College of Nursing, Bangalore. The sample included 60 students who met the inclusion criteria, and data collection continued until saturation was reached. A purposive sampling technique was employed to select participants, which included students who were present and willing to participate on the day of the escape room activity. Students who were absent on the activity day were excluded.

The study intervention involved an escape room activity, where 60 students were divided into 10 groups, each consisting of six members. The participants were given 45 minutes to complete a series of puzzles and activities related to nursing fundamentals in the nursing foundation lab. Prior to the activity, participants were given an overview of the clinical setting and the challenges they would face, with the ultimate goal being to solve a series of problems. After completing each task, participants received information to help them with the next step. During the challenge phase, participants had 45 minutes to complete the tasks, and they were allowed to request hints, with one minute being deducted from the total time for each hint used.

Following the escape room activity, a debriefing phase was conducted to allow students to reflect on their experience, share their thoughts, and connect more deeply with the learning outcomes. The study was conducted at Narayana Hrudayalaya College of Nursing, Bangalore, with permission obtained from the institution. Data collection commenced after receiving ethical approval, and written informed consent was obtained from all participants.

Focus group discussions (FGDs) were conducted with randomly selected students from each group. One student from each group was chosen using a lottery method and then regrouped into six new groups for the FGDs. Each group discussion lasted 90 minutes, and data collection continued until saturation occurred, which was reached during the third group discussion. Data from 30 participants were collected for analysis.

Data analysis was carried out using thematic phenomenological analysis, which involved familiarizing oneself with the data, assigning preliminary codes, searching for themes, reviewing the themes, defining themes, and producing the final report. Ethical considerations were strictly followed, with confidentiality and anonymity maintained throughout the study. The purpose and importance of the study were clearly explained to all participants.

The data collection instrument was a questionnaire with open-ended questions focused on participants' experiences with the escape room.

The questionnaire was divided into sections: socio-demographic data, interpersonal relationships, memory, communication, and problem-solving. The tool was validated by five experts in relevant fields, and the content validity index (I-CVI) for the open-ended questionnaire was 0.98, indicating strong agreement on the relevance and adequacy of the items.

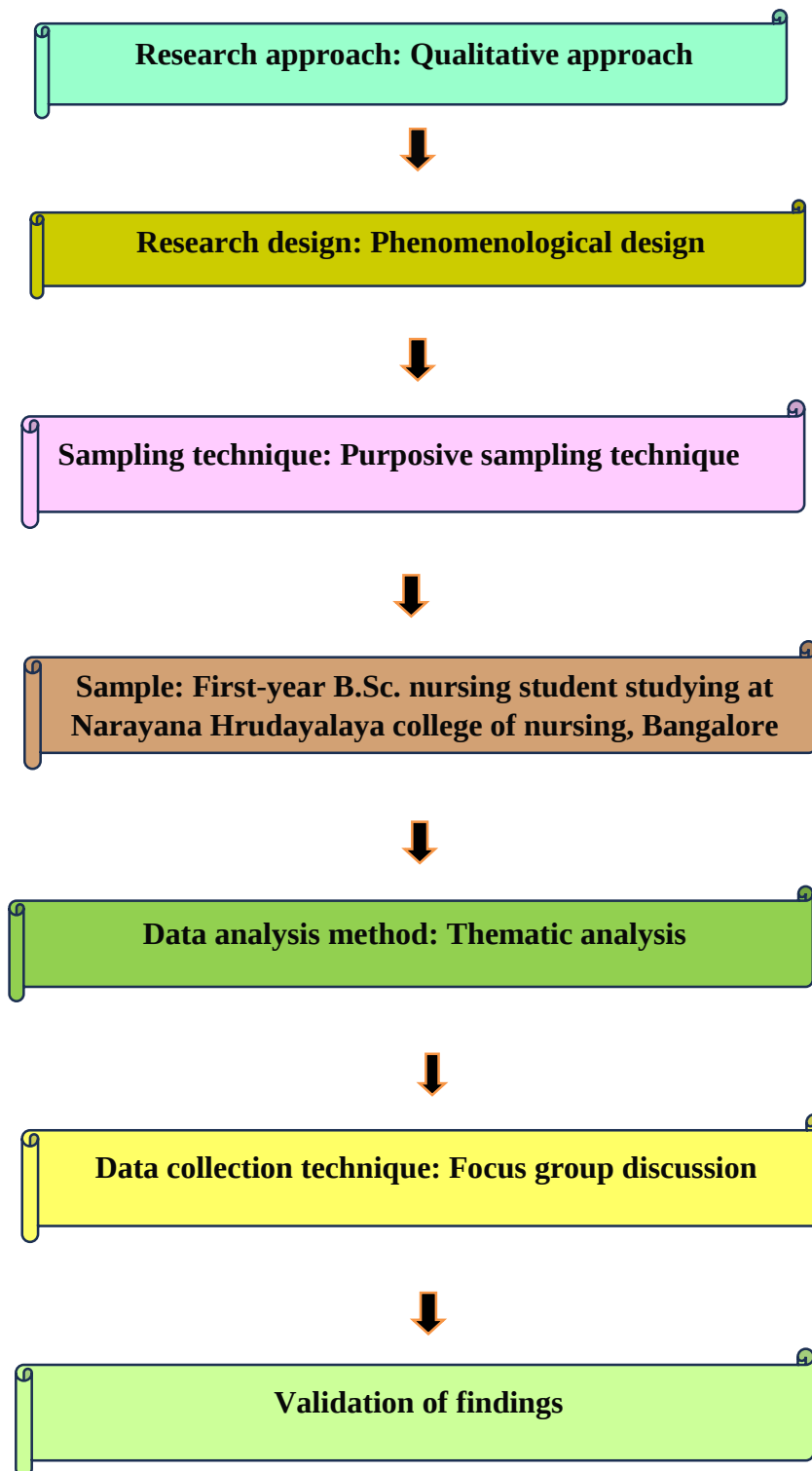


Figure 1: the schematic representation of the research methodology

RESULT

A total of 60 students participated in the escape room game, divided into 10 groups of 6 members each. The participants had 45 minutes to complete a series of tasks and escape the room. They demonstrated both theoretical and practical knowledge, which was assessed by the teacher present in the escape room. During the game, some groups actively participated from the beginning, while others initially hesitated however, after solving a few puzzles, these less-engaged groups became very interested and started to participate actively. Ultimately, 90% of the participants were able to exit the escape room.

The next day, three focus group discussions were conducted, each with 10 randomly selected participants from the 10 groups. Through these discussions, a total of 33 codes were identified and grouped into 10 subthemes, which emerged from 6 overarching themes.

The data analysis was carried out through thematic analysis. The interviews were transcribed verbatim, and the transcripts were read multiple times to ensure familiarity with the data. Initial coding was conducted, and codes with conceptual similarity were grouped into subthemes. Similarly, subthemes with conceptual similarity were grouped together to form themes. The themes were then reviewed and named. Finally, a report was produced, with each main theme defined and illustrated with representative quotes from the participants. NVivo version 14 software was used for data analysis.

The data was obtained from the participants through an open-ended questionnaire

Results are discussed in two sections.

Section-A: Sociodemographic variables of the participants

Section-B: Nursing Students' Lived Experiences with Escape Rooms as a Learning Strategy

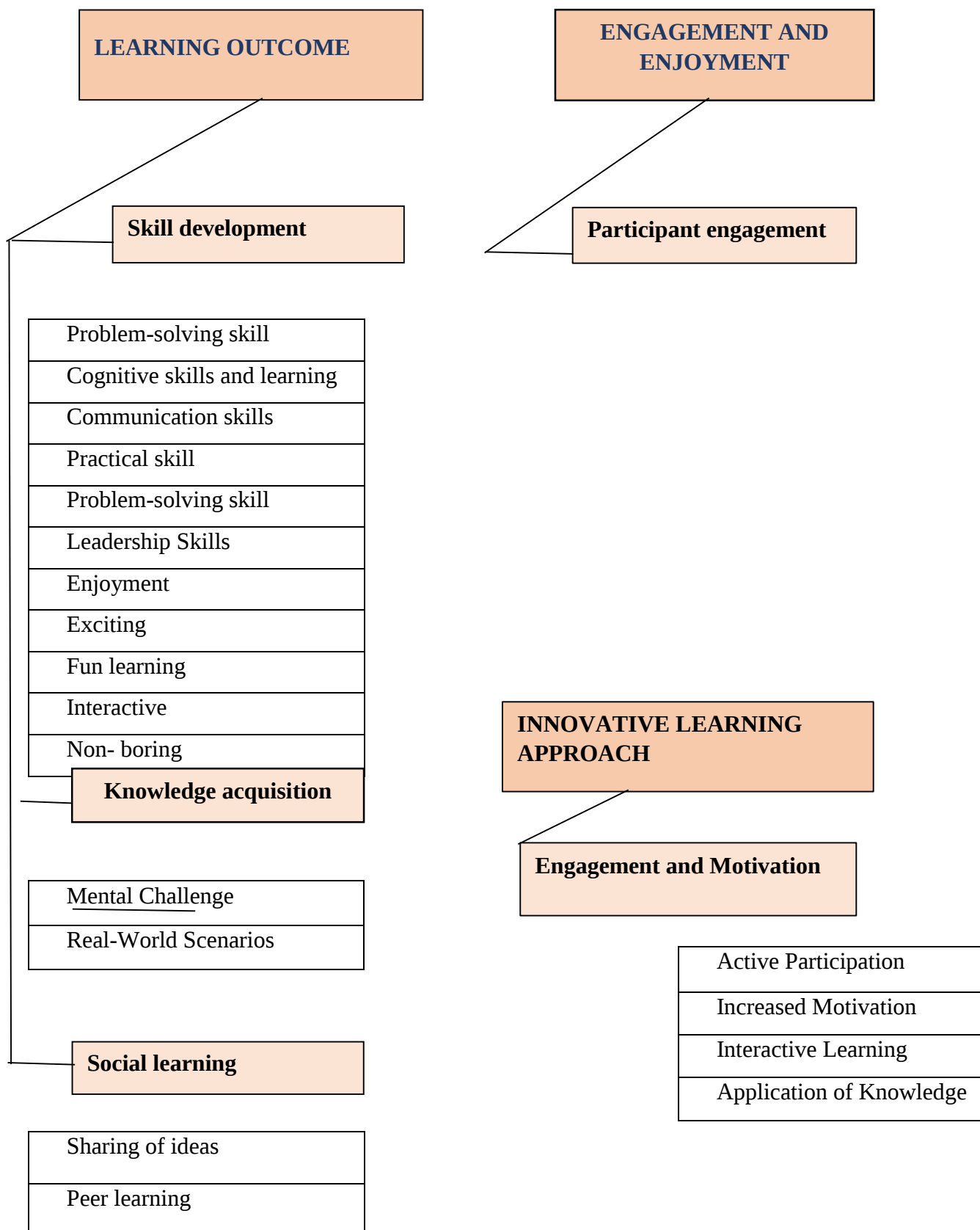
Section-A: Sociodemographic variables of the participants

A total of 60 first-semester BSc nursing students participated in the study. Fifty-one percent of the participants were 18 years old, while only 2 percent were 21 years old.

Table 1: Distribution of Sample Characteristics Frequency (N=60)

Category	Frequency	Percentage (%)	
Gender	Female	39	65
	Male	21	35
Previous exposure to escape room	1	1.6	

The study involved 60 first-semester nursing students enrolled in a fundamentals of nursing course. Sixty-five percent (39) of the participants were female, and thirty-five percent (21) were male, with a mean age of 18.98 ± 2.61 years. Among them, 1.6% (1) had previous exposure to similar escape room games for recreational purposes.

Section-B: Nursing Students' Lived Experiences with Escape Rooms as a Learning Strategy

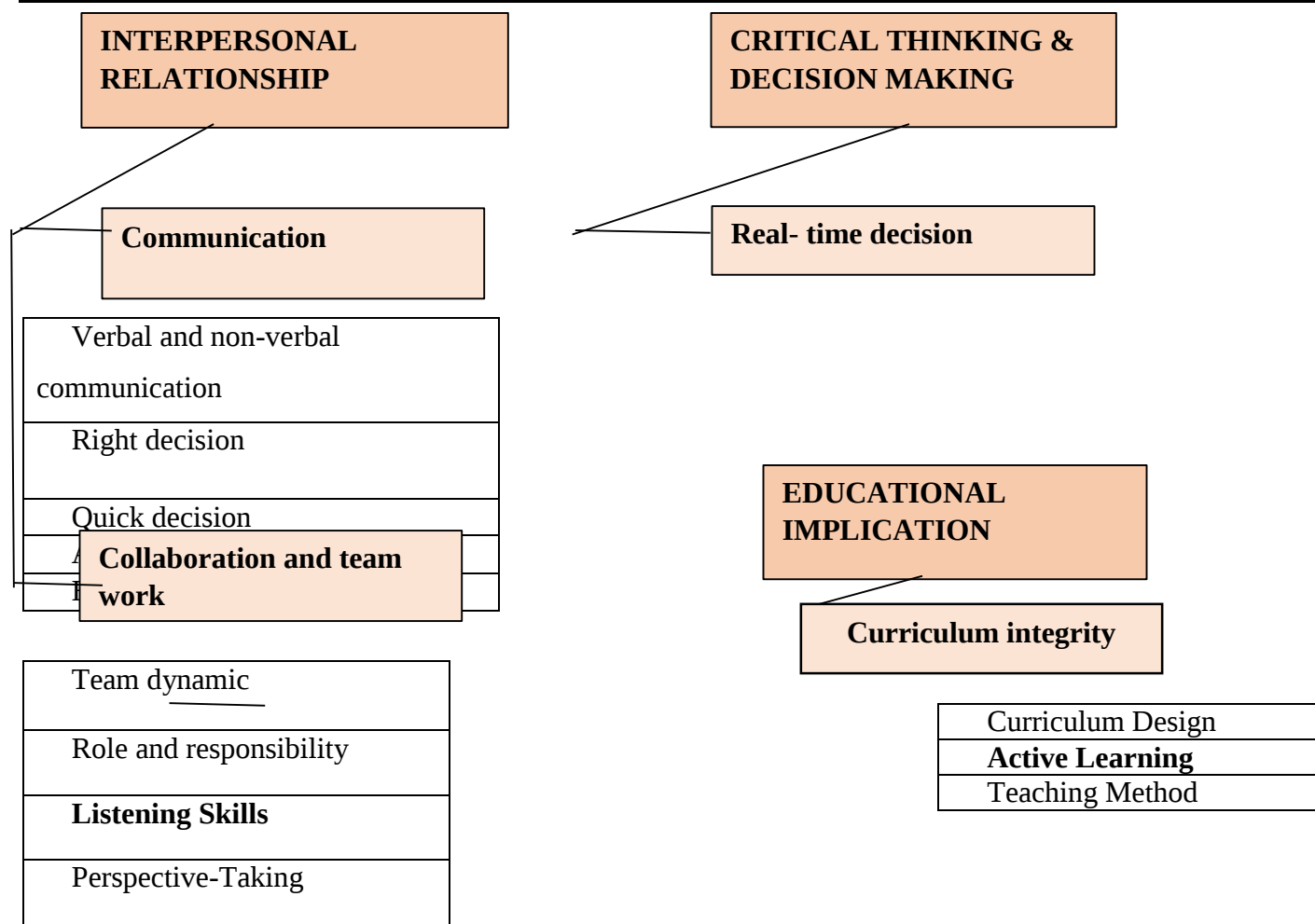


Figure 2: thematic analysis array of participants' responses from focus group discussions

THEME 1: LEARNING OUTCOME

Participants believe that escape rooms greatly improve learning by developing crucial skills like problem-solving, cognitive abilities, communication, practical skills, and leadership. They mentioned that solving mental challenges and facing real-life situations helps connect theory to practice. Social learning is encouraged through sharing ideas and working together with peers in escape rooms. Additionally, they noticed that practicing what they learn helps them remember and use their knowledge better.

Following are the statements articulated by the participants about the learning outcome:

"It was a really nice experience. Primarily, we learned about time management, team coordination, and effective teamwork. We also learned how to delegate tasks and ideas to each team member and involve everyone in the process. Overall, it was a valuable learning outcome." (G3P2)

"It has been a great experience for me, as being part of a team promotes social learning. Collaborating with others enables us to generate more ideas collectively than we could individually. Being part of a team encourages me to share more ideas, enhancing our learning and creativity through social interaction." (G3P7)

"This game is mentally challenging, requiring players to think creatively, maintain focused for long periods, and make quick decisions under pressure." (G3P5)

"This will help develop our problem-solving skills and time management. If applied to studies, it will make us more interesting." (G1P11)

THEME 2: ENGAGEMENT AND ENJOYMENT

Using escape rooms as a learning strategy leads to high engagement and enjoyment. Participants found the experience enjoyable, exciting, and fun. The interactive nature of escape rooms made learning more interesting and kept it from being boring. This method successfully captures and maintains student interest, making education engaging and enjoyable.

Following are the statements verbalized by the participants:

"As a teammate, I enjoyed it a lot. We shared our ideas and all worked really well. We also finished the task in very little time. So, it was a wonderful experience." (G3P5)

"We would like to have more of these fun learning experiences. In theory, we would only be learning, but engaging in these activities allows us to experience practical applications. We enjoy ourselves and retain what we've learned. Actually, this is a very interesting concept. Learning through reading alone can be boring, but incorporating games like these into our academic life would make it more enjoyable and exciting. It could also enhance our learning effectiveness." (G1P9)

"It was very fun to play games like this, trying to solve problems, getting the puzzles correct, and finally leaving the room." (G1P3)

"Actually, this is a very interesting concept. Learning solely through reading books can be boring. If we include such games in our academic life, it will be more fun and exciting, and we could learn things more effectively." (G1P4)

THEME 3: INNOVATIVE LEARNING APPROACH

Escape rooms represent an innovative learning approach that allows students to become inspired and more involved. Within the subtheme of engagement and motivation, the codes reveal that this method promotes active participation and increases motivation. The interactive nature of escape rooms encourages students to engage deeply with the material, leading to more dynamic and effective learning. Additionally, the need to apply knowledge in a practical setting enhances students' understanding and retention of information. This innovative approach not only motivates students but also ensures they are actively involved in their learning process.

The following are the statements used by the participants:

"I was excited to participate in this game as it was my first experience, and I also enjoy these kinds of games. It is an innovative learning experience." (G1P4)

"The positive aspect I experienced while working as a team was the reduction in time consumption and the increase in idea generation. Working together was a good experience because we came up with numerous ideas, and everyone had a specific task to complete. This was one of the main aspects I enjoyed about this project. It gave us a new experience of sharing ideas, thinking critically, and also motivated me to enhance my critical thinking." (G3P6)

"In classrooms, where teachers teach and students listen, interaction with everyone is limited. We tend to forget things we learn from books quite easily. However, activities like these are remembered for a long time." (G1P8)

"It is very beneficial to add this game to the education system because we can discover new information about learning. It is exciting to have a game spirit, and we can learn new things." (G2P6)

THEME 4: INTERPERSONAL RELATIONSHIP

Interpersonal relationships play a key role in escape rooms as a learning strategy. Both verbal and nonverbal interactions are important for making the right decisions. Clear communication helps team members understand each other and share ideas effectively. In terms of collaboration and teamwork, the analysis highlights the importance of team dynamics, roles and responsibilities, listening skills, and perspective-taking. These factors show that participants need to work well together, understand their roles, listen to each other, and consider different viewpoints. This collaborative environment not only aids in learning but also strengthens relationships among team members, preparing them for future teamwork.

The following are the statements articulated by the participants

"As a teammate, I had a nice experience where I learned how to manage time and coordinate effectively. I also understood the importance of unity among team members." (G3P1)

"Our group worked with coordination and unity to collaborate effectively." (G2P3)

"As a team member, I have never felt lonely; we were constantly discussing everything, which made it very interesting." (G1P4)

"It was a great experience because I hadn't participated in such group work before, and this activity helped me understand how to handle similar situations. As a team member, I learned how to coordinate and perform tasks effectively." (G3P9 & G3P10)

"Through communication, listening to everyone's ideas, and effectively implementing solutions to solve problems, the teamwork becomes more interesting." (G3P1)

THEME 5: CRITICAL THINKING AND DECISION MAKING

Participants reveal that escape room games enhance critical thinking and decision-making skills. Within the subtheme of real-time decision-making, the codes indicate that participants are required to make quick decisions, analyze situations effectively, and engage in active learning. The need to make rapid decisions in a high-pressure environment helps students develop their ability to think critically and respond promptly to changing circumstances. Analyzing situations in real time ensures that participants can assess information quickly and accurately, leading to more effective learning outcomes. Overall, escape rooms create a practical setting where students can develop and sharpen their decision-making skills.

The participant revealed the following statements regarding critical thinking and decision-making:

"We communicate with our teammates so that they can combine their ideas and make suitable decisions together." (G1P7)

"Escape rooms can assist us in daily activities. When encountering problems in hospitals or colleges, we need to find solutions or clues to navigate the situation effectively. These experiences, like those in escape rooms, prepare us to handle similar challenges in the future." (G1P7)

"Introducing this kind of learning into the education system will help us develop our critical thinking, make decisions quickly, and perform well in real-life situations. Critical thinking and quick reactions are essential skills we need." (G1P6)

THEME 6: EDUCATIONAL IMPLICATION

Escape rooms have significant educational implications, particularly in curriculum integration. The subtheme of curriculum integration is highlighted by codes such as curriculum design, active learning, and teaching methodology. Incorporating escape rooms into the curriculum requires thoughtful design to ensure alignment with educational goals. This approach promotes active learning by engaging students in hands-on, interactive experiences. Additionally, escape rooms offer a dynamic teaching methodology that can enhance traditional teaching methods, making learning more engaging and effective.

The following statements were verbalized by the participants regarding the educational implications:

"I think we should add escape rooms to our syllabus because we can learn many skills from them, especially teamwork, critical thinking, sharing ideas, and much more." (G3P5)

"I really love this experience because it helps me develop critical thinking skills, improve my ability to respond quickly, and learn how to better treat my patients. Teamwork also played a significant role in enhancing my learning. Overall, it was a great experience that I strongly believe should be integrated into our education system." (G3P7)

"For this career, these games will help with studying as well. We can easily understand the equipment names, and they will stay in our minds for a long time. Games or movies tend to have a lasting impact. It is very easy. Group work allows us to get different ideas and include them. This reduces our tension and gives us confidence to participate in the game." (G2P8)

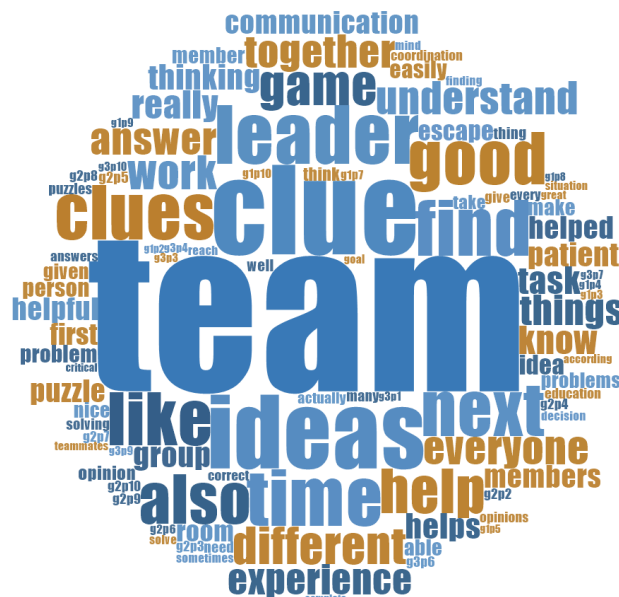


Figure 3: Word cloud of verbatim

Interpersonal relationships played a crucial role, with effective communication and the inclusion of diverse perspectives being pivotal for collaborative decision-making. Participants viewed escape rooms as an innovative learning approach that promotes active involvement, practical application of knowledge, and discovery of new learning aspects, thus enhancing motivation and dynamic learning. The games also improved critical thinking and decision-making skills due to the need for quick, effective analysis in a high-pressure environment.

Educationally, participants advocated for incorporating escape rooms into the curriculum, particularly in nursing education, to teach teamwork, critical thinking, and hands-on skills not typically covered in traditional classrooms. This suggests a strong recommendation for integrating such interactive and immersive learning experiences into the educational system.

DISCUSSION

This qualitative study explored the experiences regarding escape rooms as a method of learning strategy among nursing students. Current findings have shown that nursing students explored various experiences regarding escape rooms have been organized into Learning outcomes, Engagement and Enjoyment, Innovative learning approach, Interpersonal relationships, Critical thinking and Decision-making, and educational implication. Through exploration of various experiences regarding escape rooms as a method of learning strategy among nursing students. After the escape room exposure students experience escape room promote Skill development, Knowledge acquisition, social learning, Retention of memory, Participant engagement, Engagement and Motivation, Communication, Collaboration and teamwork, and Real-time decision. The participants strongly recommended that this type of escape room game should be included in the nursing syllabus. The student feels that traditional classroom learning often involves teachers teaching while students listen, creating a one-way interaction. They believe this passive listening can lead to forgetting information quickly. So they believe that Game-based learning should be implemented in nursing education.

The following segment provides the focus group discussion of the above findings.

LEARNING OUTCOME

Participants reported that the escape room game enhanced their learning outcomes, particularly in skill development, knowledge acquisition, social learning, and memory retention.

i. Skill development

Most participants noted improvements in problem-solving, communication, and leadership skills. They also reported enhanced time management and teamwork abilities.

These findings align with a cross-sectional study on digital escape rooms in nursing education, which highlighted improvements in teamwork, communication, and critical thinking.²¹ Other studies also support the effectiveness of escape rooms in strengthening teamwork and leadership skills through engaging simulations.^{22,36}

ii. Knowledge acquisition

Knowledge acquisition in escape rooms occurs through hands-on experiences that mimic real-world scenarios, where participants solve mental challenges and apply existing knowledge while learning new concepts. This immersive approach enhances memory, understanding, and critical thinking, as well as promotes collaboration and idea exchange. Participants noted the game's similarity to real-life situations, requiring focus and critical thinking. The findings are a line with other studies.^{6,13}

iii. Social learning

The majority of participants expressed that social learning holds significant importance in their lives.^{9,10} Social learning in escape rooms occurs through collaboration, where students share ideas and learn from each other.

ENGAGEMENT AND ENJOYMENT

Participants stated that engaging in the escape room game was fun, exciting, and non-boring, and it facilitated learning.

i. Participant engagement

participants engagement in escape rooms is crucial for effective learning, as it promotes attention, curiosity, and involvement through active participation, teamwork, and motivation. The fun and interactive nature of escape rooms enhances learning outcomes. Most participants reported that the escape room was fun, exciting, and engaging.^{6,21}

INNOVATIVE LEARNING APPROACH

In escape room games, an innovative learning approach uses creative and interactive methods to make learning more engaging and motivating.

Engagement and motivation

Participants believe that escape rooms represent a new way of learning. This method encourages active engagement and boosts motivation, making learning more exciting and effective. Other studies supported the findings of this research ^{19, 13,20,14,}

INTERPERSONAL RELATIONSHIP

Interpersonal relationships are important for effective interactions and are supported by good communication and collaboration and team work.

i. Communication

The majority felt that communication is one of the most vital components in everything. Communication can be both verbal and nonverbal; clear communication helps avoid misunderstandings and builds trust by sharing information and listening to others. It also aids in making the right decisions and distinguishing between what is right and wrong. ^{31, 26}

It is important to recognize that communication is crucial in all aspects of life. To enhance both personal and professional success, individuals and organizations should prioritize effective communication. This includes improving verbal and nonverbal skills, practicing active listening, and ensuring clarity to build trust and reduce misunderstandings. Implementing communication training in professional settings can also improve conflict resolution and decision-making. By investing in communication skills, individuals can foster better interactions, smoother collaborations, and more informed choices.

Collaboration and teamwork

Participants stated that collaboration and teamwork are essential for success. Participants work together to solve puzzles and complete tasks, which requires good communication and coordination. Each team member shares their skills and ideas, helping each other out. This teamwork not only helps solve the challenges but also strengthens relationships and builds a sense of unity among the participants.

The present study is supported by another study that found the intervention was both effective and engaging for students, even though it couldn't be formally assessed. Students reflected on their experience and realized the importance of clear communication and purposeful teamwork for successful interprofessional practice. ^{9,10}

CRITICAL THINKING AND DECISION MAKING

Participants felt that critical thinking and decision-making are essential because they must think creatively to quickly analyze and solve tasks. This helps improve their quick decision-making skills, preparing them for real-world situations where fast and smart choices are important. The study shows the need to make quick decisions, analyze situations effectively, and actively engage in learning.

i. Real-time decision

Participants felt that Real-time decision-making is essential in escape rooms, where they need to think and act quickly to solve puzzles and complete tasks within a set time. This forces them to analyze information, consider options, and make fast decisions under pressure. Practicing real-time decision-making helps players improve their ability to make quick and effective choices, which is useful in real-life situations where timely decisions are important.

The findings of the present study are supported by another study, which concluded that gamification, such as digital escape rooms (DERs), can effectively enhance teamwork, communication, and critical thinking skills in nursing education. ²¹

EDUCATIONAL IMPLICATION

Escape rooms offer significant educational benefits, making them a valuable tool in various learning environments. One key implication is their ability to maintain curriculum integrity.

i. Curriculum integrity

The majority of participants emphasized the importance of adding escape rooms to the syllabus because they teach many valuable skills that are not typically covered in the classroom. Therefore, participants strongly recommend incorporating this type of learning into the education system, especially in nursing.

This study is supported by several studies. It is expressed that game-based learning and teaching methods might be useful,^{13,20,3,4} with some strongly recommending that escape room games should be integrated into nursing courses.^{19,21} One study suggests that digital escape rooms (DERs) should complement traditional teaching methods.² Another study supported that game-based learning as a teaching strategy in nursing schools effectively inspired students to focus more in the classroom.^{14,20,26}

This study has some limitations. The participants were limited to only 1st year BSc nursing students. The research was conducted in one setting only i.e. one nursing institution. The findings from a qualitative study have limited generalizability to large populations.

Future study recommendations the study can be done in different settings. A mixed-methods study can be conducted for a comprehensive understanding because it allows for a more complete assessment of the impact of escape rooms on learning. Additionally, it can measure specific outcomes and effectiveness, providing statistical evidence on their impact. Experts from various medical fields can collaborate to design and develop the escape room, bringing their specialized knowledge to ensure the scenarios are realistic and relevant.

CONCLUSION

This chapter presents the findings of a phenomenological study exploring nursing students' experiences with escape rooms as a learning strategy. Data were collected through focus group discussions with 30 participants, and the analysis revealed six main themes: learning outcomes, engagement and enjoyment, innovative learning approaches, interpersonal relationships, critical thinking and decision-making, and educational implications. The study found that escape rooms significantly boosted student engagement, skill development, knowledge acquisition, social learning, and memory retention. The immersive nature of escape rooms also fostered strong communication, collaboration, and teamwork, while the challenges encouraged real-time decision-making, enhancing critical thinking skills.

REFERENCES

1. Ayeni A. Teachers' Professional Development and Quality Assurance In Nigerian Secondary Schools. *World J Educ.* 2011 Oct 19;1.
2. Duquesne University School of Nursing [Internet]. 2020 [cited 2023 Jan 8]. Using Escape Rooms for Nurse Education. Available from: <https://onlinenursing.duq.edu/blog/using-escape-rooms-for-nurse-education/>
3. Reinkemeyer EA, Chrisman M, Patel SE. Escape rooms in nursing education: An integrative review of their use, outcomes, and barriers to implementation. *Nurse Educ Today.* 2022 Dec 1;119:105571.
4. Hermanns M, Deal B, Campbell AM, Hillhouse S, Opella JB, Faigle C, et al. Using an "Escape Room" toolbox approach to enhance pharmacology education. *J Nurs Educ Pract.* 2017 Dec 6;8(4):89.
5. Olugbenga M. The Learner Centered Method and Their Needs in Teaching. 2021 Oct 1;
6. Gómez-Urquiza JL, Gómez-Salgado J, Albendín-García L, Correa-Rodríguez M, González-Jiménez E, Cañadas-De la Fuente GA. The impact on nursing students' opinions and motivation of using a "Nursing Escape Room" as a teaching game: A descriptive study. *Nurse Educ Today.* 2019 Jan;72:73–6.

7. Roman P, Rodriguez-Arrastia M, Molina-Torres G, Márquez-Hernández VV, Gutiérrez-Puertas L, Ropero-Padilla C. The escape room as evaluation method: A qualitative study of nursing students' experiences. *Med Teach*. 2020 Apr 2;42(4):403–10.
8. Gómez-Urquiza JL, Hueso-Montoro C, Correa-Rodríguez M, Suleiman-Martos N, Martos-Cabrera MB, Gómez-Salgado J, et al. Nursing students' experience using an escape room for training clinical skills and competencies on emergency care: A qualitative observational study. *Medicine (Baltimore)*. 2022 Jul 29;101(30):e30004.
9. Manojlovic H. Escape room as a teaching method. *Opus Educ*. 2022 Aug 4;9.
10. Moore L, Campbell N. Effectiveness of an escape room for undergraduate interprofessional learning: a mixed methods single group pre-post evaluation. *BMC Med Educ*. 2021 Apr 20;21(1):220.
11. Boctor L. Active-learning strategies: The use of a game to reinforce learning in nursing education. A case study. *Nurse Educ Pract*. 2012 Aug 18;13.
12. Guckian J, Eveson L, May H. The great escape? The rise of the escape room in medical education. *Future Healthc J*. 2020 Jun;7(2):112–5.
13. Molina-Torres G, Cardona D, Requena M, Rodriguez-Arrastia M, Roman P, Ropero-Padilla C. The impact of using an “anatomy escape room” on nursing students: A comparative study. *Nurse Educ Today*. 2022 Feb;109:105205.
14. Castro TC, Gonçalves LS. The use of gamification to teach in the nursing field. *Rev Bras Enferm*. 2018 May;71(3):1038–45.
15. Rao BJ. Innovative Teaching Pedagogy in Nursing Education. *Int J Nurs Educ*. 2019 Nov 21;11(4):176–80.
16. Taraldsen LH, Haara FO, Lysne MS, Jensen PR, Jenssen ES. A review on use of escape rooms in education – touching the void. *Educ Inq*. 2022 Apr 3;13(2):169–84.
17. Morrell BLM, Eukel HN, Santurri LE. Soft skills and implications for future professional practice: Qualitative findings of a nursing education escape room. *Nurse Educ Today*. 2020 Oct;93:104462.
18. López-Pernas S, Saqr M, Gordillo A, Barra E. A learning analytics perspective on educational escape rooms. *Interact Learn Environ*. 2022 Feb 22;0(0):1–17.
19. Powers K, Brandon J, Townsend-Chambers C. Preparing nursing students for home health using an escape room: A qualitative study. *Nurse Educ Today*. 2022 Jan;108:105215.
20. Xu Y, Lau Y, Cheng LJ, Lau ST. Learning experiences of game-based educational intervention in nursing students: A systematic mixed-studies review. *Nurse Educ Today*. 2021 Dec 1;107:105139.
21. Antón-Solanas I, Rodríguez-Roca B, Urcola-Pardo F, Anguas-Gracia A, Satústegui-Dordá PJ, Echániz-Serrano E, et al. An evaluation of undergraduate student nurses' gameful experience whilst playing a digital escape room as part of a FIRST year module: A cross-sectional study. *Nurse Educ Today*. 2022 Nov;118:105527.
22. Gamification on Instagram: Nursing students' degree of satisfaction with and perception of learning in an educational game | Elsevier Enhanced Reader [Internet]. [cited 2023 May 8]. Available from: <https://reader.elsevier.com/reader/sd/pii/S0260691722002696?token=DE8E2E5164A070F075DAF0B9D4AB294EC90EC24F213D533D427AD54EC7CCDC9FD551DF2D934A37274E9E1186DE58DCCA&originRegion=eu-west-1&originCreation=20230508132056>

23. Koivisto JM, Multisilta J, Niemi H, Katajisto J, Eriksson Haavisto E. Learning by playing: A cross-sectional descriptive study of nursing students' experiences of learning clinical reasoning. *Nurse Educ Today*. 2016 Jun 1;45.
24. Çelik G. The Impact of Using the Wound Care Escape Room as a Teaching Game on the Opinions and Motivation of Nursing Students. *J Educ Res Nurs*. 2023 Jan 1;318–22.
25. Roman P, Rodriguez-Arrastia M, Molina-Torres G, Márquez-Hernández VV, Gutiérrez-Puertas L, Ropero-Padilla C. The escape room as evaluation method: A qualitative study of nursing students' experiences. *Med Teach*. 2020 Apr;42(4):403–10.
26. Ferreira M, Marques da Silva D, Pires A, Sousa M, Nascimento M, Calheiros N. Clinical Skills and Communication in Nursing Students: In 2016. p. 51–60.
27. Game Based Learning in Nursing - An Innovative Strategy. *Medicon Med Sci* [Internet]. 2023 Jan 30 [cited 2024 Jul 9]; Available from: <https://themedicon.com/pdf/medicalsciences/MCMS-04-098.pdf>
28. Gómez-Urquiza JL, Requena-Palomares I, Gorjón-Peramato E, Gómez-Salgado J, Cañadas-De la Fuente GA, Albendín-García L. Emergency and critical care professionals' opinion on escape room as a health sciences evaluation game: A cross-sectional descriptive study. *Medicine (Baltimore)*. 2022 Jun 24;101(25):e29432.
29. The Impact of an Escape Room Simulation to Improve Nursing Teamwork, Leadership and Communication Skills: A Pilot Project - Beatriz Valdes, Mary Mckay, Jill S. Sanko, 2021 [Internet]. [cited 2023 Jun 8]. Available from: <https://journals.sagepub.com/doi/10.1177/1046878120972738>
30. Ghiamikeshtgar N, Ghaljaei F, Ghaljeh M, Taherizade B, Mahmoodi N, Sharifi S. The effect of escape room clinical evaluation method on satisfaction, learning, and preparedness to practice as interns of nursing students: A quasi-experimental quantitative study. *J Educ Health Promot*. 2024 Jul 11;13.
31. Ghiamikeshtgar N, Ghaljaei F, Ghaljeh M, Taherizade B, Mahmoodi N, Sharifi S. The effect of escape room clinical evaluation method on satisfaction, learning, and preparedness to practice as interns of nursing students: A quasi-experimental quantitative study. *J Educ Health Promot*. 2024 Jun;13(1):225.
32. Igwenagu C. *Fundamentals of research methodology and data collection*. 2016.
33. SciSpace - Question [Internet]. [cited 2024 May 13]. What is research approach? | 3 Answers from Research papers. Available from: <https://typeset.io/questions/what-is-research-approach-2a7q513bzz>
34. Sharma S. *Nursing Research and Statistics - E-Book*. Elsevier Health Sciences; 2022. 431 p.
35. Kim Y. The Pilot Study in Qualitative Inquiry. *Qual Soc Work*. 2010 Jun 16;9.
36. Anwer DS, Abdullah SI. Faculty and Students' Perspectives on using Games-Based Learning as A Teaching Strategy in Nursing Education. *J Univ Raparin*. 2023 Mar 29;10(1):147–56.