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The effect of an escape room game on students' academic self-efficacy and motivation for critical thinking: oncology nursing course

Betül Çakmak[1*] and Tuğçe Türten Kaymaz[2]

Abstract

Objective This study investigated the effect of an escape room game on oncology nursing course students academic self-efficacy and motivation for critical thinking.

Methods This study adopted a one-group pretest–posttest experimental research design. The sample consisted of forty-two nursing students. Data were collected using a personal information form, the Academic Nurses' Self-Efficacy Scale, and the Critical Thinking Motivational Scale. The data were analyzed using descriptive statistics, t-test, Pearson-Spearman, Wilcoxon test.

Results None of the nursing students had played an escape room game for educational purposes before (100%; $n=42$). The escape room game helped nursing students develop academic self-efficacy and boosted their motivation for thinking critically respectively ($t=-3.252$, $p=0.002$; $Z=-2.027$, $p=0.043$). More than 90% of the students reported that the escape room game helped them understand the subject, retain information, and apply it effectively.

Conclusion Universities should incorporate escape room games within the scope of oncology nursing courses as an alternative teaching approach to help students enhance their academic self-efficacy and critical thinking motivation. Researchers should plan studies with different samples to investigate the impact of escape room games on academic self-efficacy and critical thinking motivation.

Keywords Oncology, Escape room, Gamification, Nursing students, Critical Thinking Motivation, Academic self-efficacy

Introduction

Cancer is currently reported as the second leading cause of death globally. However, it is anticipated to become the number one cause of death within the next decade [1, 2]. The importance of adopting a multidisciplinary approach, implementing effective cancer control policies, developing state-sponsored action plans, and bolstering the workforce of specialized oncology nurses are frequently underscored in efforts to curb the rising number of cancer cases and related deaths [3, 4].

*Correspondence:
Betül Çakmak
betulglchms@gmail.com; b.cakmak@aybu.edu.tr
[1] Department of Nursing, Faculty of Health Sciences, Ankara Yildirim Beyazit University, Ankara, Turkey
[2] Department of Nursing, Faculty of Health Sciences, Duzce University, Ankara, Turkey

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According to experts, we need to develop oncology nursing for two reasons. First, nurses are at the center of managing the global burden of cancer. Second, patients with cancer need both basic and specialized nursing care [5, 6]. Research shows that oncology nurses provide more qualified care to cancer patients today [7, 8]. Nursing education should prioritize the care of oncology patients to enhance oncology nursing practice and contribute positively to cancer care management [9]. However, it remains the case that most curricula around the world still inadequately address oncology nursing [3, 10, 11]. Therefore, curricula should offer a separate course called oncology nursing. Healthcare professionals should develop more clinical practices for the care of oncologic diseases. Authorities should develop relevant policies. Lastly, educators should adopt new approaches to contribute to the development of educational processes [12, 13]. One of these approaches is gamification-based education, which has gained prominence in nursing education in recent years [14, 15]. Non-game designs that utilize game elements to enhance problem-solving, learning, motivation, and engagement are considered 'gamification [16, 17]. Additionally, gamification applications include scoring, badges, leaderboards, and tasks or challenges of varying difficulty within the framework of a specific scenario, providing feedback and rewards by tracking the participant's progress [18]. Gamification supports learning processes, motivates students, and helps them acquire knowledge and develop skills because games have principles and goals and promote cooperation [16, 17]. [19, 20].

Currently, escape room games are used as an educational tool across various fields, from primary education to higher education [21]. They are generally designed to facilitate learning and skill acquisition [22]. When describing escape room games as a gamification methodology, key features include the presence of a problem or challenge within the gamification content, the process being guided by instructions, and the incorporation of an enjoyable learning experience [23].

Since escape room games require problem-solving, critical thinking, and active participation in decision-making within a team, they engage an individual's cognitive processes throughout the gameplay. The challenges and puzzles integrated into the game content encourage players to think creatively and strategically, enhancing their problem-solving skills [24–26]. Players use psychomotor skills and body movements to overcome challenges. They also solve meta-puzzles and ciphers to complete the games [20, 27]. Therefore, escape room games aim to motivate players, encourage them to learn new things, and help them experience less stress while discovering their strengths [28, 29]. The literature indicates that nurse educators use escape room games to teach complex physiological processes and nursing concepts in areas such as cardiology, the renal system, and many other fields. [25, 26]. Research shows that escape room games remind students how to use their knowledge and skills and help them build up confidence and motivation. Escape room games also help students develop interpersonal skills, such as leadership and teamwork. Moreover, those games allow students to experience less stress [29, 30]. The objectives of escape room games in nursing education are to establish practice environments where students can develop clinical decision-making competence and enhance their ability to provide safe and high-quality patient care services [31, 32]. Additionally, a review of the literature shows that researchers frequently explore concepts such as motivation, knowledge level, willingness, enjoy, and self-efficacy in their studies [26, 32–35]. It is thought that the academic self-efficacy of nursing students who will provide post-graduation care to cancer patients who need qualified nursing care will be improved by increasing their learning motivation and enabling them to remember the information they learned during the escape room game implementation. Thus, we should adopt up-to-date approaches to support the education of nurses [3]. Therefore, this study investigated the effect of an escape room game on oncology nursing students' academic self-efficacy and motivation for critical thinking.

Method

Research design

This study adopted a one-group pretest–posttest experimental research design (Clinical Trials Protocol Number: NCT06181058). The study adhered to the CONSORT (Consolidated Standards of Reporting Trials) guidelines.

Sample

The study population consisted of 80 nursing students enrolled in an "Oncology Nursing" course in the fall semester of 2023–2024. Participants were recruited using complete enumeration sampling. Forty-two students met the inclusion criteria. The discontinuation criteria were (1) not finishing the game and (2) not filling out the data collection tools. All students finished the game and filled out the data collection tools. Therefore, the final sample consisted of 42 participants (Flow chart).

Data collection tools

Data were collected using a personal information form (PIF), the Academic Nurses' Self-Efficacy scale (ANSEs), and the Critical Thinking Motivational Scale (CTMS).

Personal Information Form (PIF)

The researchers developed the personal information form (PIF). It consisted of eight items on sociodemographic characteristics [age, gender, grade point average (GPA), etc.] and views on the game.

Academic Nurses' Self-Efficacy Scale (ANSEs)

The Academic Nurses' Self-Efficacy Scale (ANSEs) was developed by Bulfone et al. (2019) and adapted to Turkish by Aktay and Korkmaz (2021) [36, 37]. The scale consists of 14 items and four subscales: (1) internal emotion management, (2) auto-regulatory behavior, (3) external emotion management, and (4) sociality. Higher scores indicate more academic self-efficacy. In the present study, the scale had a Cronbach's alpha score of 0.78.

Critical Thinking Motivational Scale (CTMS)

The Critical Thinking Motivational Scale (CTMS) was developed by Valenzuela, Nieto, and Saiz [38] and adapted to Turkish by Dönmez and Kaya [38, 39]. The instrument consists of 19 items rated on a six-point Likert-type scale. The scale has two subscales: (1) expectancy and (2) value. The "value" subscale has four components: attainment, utility, cost, and interest. Higher scores indicate more motivation for critical thinking. In the present study, the scale had a Cronbach's alpha score of 0.92.

Game materials

The game materials were developed based on the curriculum, The oncology nursing course refers to a course prepared by faculty members specialized in internal medicine nursing and approved by the university senate. learning outcomes, and game variations (Supplementary material_1). The materials included chemotherapy drug preparation equipment (goggles, masks, aprons, gloves, etc.), visuals on extravasation and oral mucositis, dialogue cards, puzzles, word hunt puzzles, 3D letters, envelopes, colored pens, cork board, note papers, and patient models. A 3D printer was used to create the letters and numbers needed for diagnoses and symptoms, as well as escape codes. The larger letters represented the escape codes given to participants at the end of each game phase, while the smaller letters and numbers were created for use in the game content (supplemental material_2).

Game design

In this research, the Gagne game model was used to design the content of the escape room game. This model has learning outcomes through which students can develop their critical thinking skills, intrinsic motivation and desire to learn through play [40]. The intervention consisted of eight stages: seven games and one escape code. The game content covered 70% of the topics of the oncology nursing course. To create the content, the researchers used oncology nursing course subject content and Gagne's "Nine Learning Activities."The nine events in Gagne's learning model are: attracting attention, informing the student about the goal, encouraging recall of previous knowledge, presenting information, providing guidance, revealing performance, providing feedback, evaluating performance, retaining and improving transfer [41]. Nursing students used oncological terminology to develop the escape codes (supplementary material_3).

The intervention (escape room game) was carried out in the nursing department's laboratory. It included game sequences created by the researchers (supplementary material_4). The lab space was divided in two so that the game could be played by two groups at the same time. The materials were placed in both spaces in the same order. Sequence numbers were placed at the stations and/or in front of the materials to help participants recognize the game steps. The researchers created game cards/envelopes specific to each game.

Intervention

The research was conducted in one day in December 2023, during the final week of the academic year, after all topics of the oncology nursing course had been covered. The implementation of the research took one day to determine the effect of situational incentives on students' learning motivation. One week prior to the intervention, the researchers invited all students to participate after explaining the study's name, scope, timing, location, and expectations from them. Written informed consent was obtained from all students who agreed to participate. The student who was the class representative created seven groups of 5–7 people. In another room, the researchers gave preliminary information (15 min) to all participants about the purpose, rules, duration, and setting of the game before the intervention. The researchers narrated the story of a patient with cancer aloud to the participants and posted it on a pinboard.

The first team was selected by lot. The remaining six teams were let into the lab as two teams by lot. Before the game, each team chose a team leader who was responsible for retrieving the envelopes containing the puzzles/tasks, clues, and passwords from the research station. At every stage of the game, each researcher provided the materials and kept a stopwatch for one of the teams playing at the same time (the first researcher for group A and the second researcher for group B).

The researchers started the stopwatch immediately after giving the first envelope to the team leader. The game proceeded linearly. After solving the puzzle/riddle on the first envelope, the team obtained the game envelope and a key letter for escape. The game ended when the team created the correct password with the key letters and showed it to the researcher. It took each team 24–29 min to finish the game. After the game, the researchers posed four questions to the participants to receive feedback about the game and oncology nursing. The following are the questions:

- Do you think the game contributed to your academic competence and critical thinking skills?
- What nursing roles do you think you used more during the game?
- What oncology nursing topics do you think the game helped you understand more, and why?
- If you had not played the game, what oncology nursing topics would you have difficulty understanding?

Data collection

Before the game, all participants answered the first six questions on the PIF and completed the ANSES and CTMS. After the game, they answered the last two questions on the PIF and completed the ANSES and CTMS. The intervention lasted 60 min.

Data analysis

The data were analyzed using the Statistical Package for Social Sciences for Windows 21.0 (SPSS 21, IBM Corporation, Armonk, NY, USA). Frequency tables and descriptive statistics were used for descriptive characteristics. Pearson-χ2 cross-tabulations were used to examine the relationship between two qualitative variables. Both total and subscale scores were assessed for normality using the Kolmogorov–Smirnov (K-S) and Shapiro–Wilk (S-W) tests. These tests provided *p*-values to determine whether the data significantly deviated from a normal distribution. A *p*-value less than 0.05 typically indicates that the data do not follow a normal distribution, suggesting non-normality. A p-value < 0.05 was considered significant. The independent samples t-test was used to compare two independent groups (t-table value), while the paired-sample test was used to compare two dependent groups (t-table value). Wilcoxon test was used to compare two dependent groups (Z-table value). Spearman's correlation coefficient was used to determine the relationship between two quantitative variables.

Table 1 Sociodemographic Characteristics

Variable ($N=42$)	n	%
Age		
21	12	28.6
22	20	47.6
≥ 23	10	23.8
Gender		
Woman	28	66.7
Man	14	33.3
GPA		
1.86–2.28	2	4.8
2.29–2.98	20	47.6
2.99–4.00	20	47.6
Have you played an escape room game before?		
Yes	3	7.1
No	39	92.9
Have you ever played an escape game as a teaching method?		
No	42	100.0
Would you like to see the escape room game introduced into the curriculum?		
Yes	40	95.2
No	2	4.8

Results

Table 1 shows the distribution of the participants' sociodemographic characteristics.

Less than half of the participants were 22 years old (47.6%; $n=20$). Over half of the participants were women (66.7%; $n=28$). Less than half of the participants had a GPA of 2,99 to 4,00 (47.6%; $n=20$). Most participants had never played an escape room game before (92.9%; $n=39$). None of the participants had played an escape room game for educational purposes before (100%; $n=42$). Most participants said they would like to see escape room games introduced into the curriculum (95.2%; $n=40$).

Table 2 shows the distribution of the participants' views of the escape room game. More than 85% of the students reported that they enjoyed the escape room game, found it effective for understanding and retaining the material, and believed it helped them think quickly, make decisions, and stay motivated.

Table 3 shows the distribution of the participants' pretest–posttest ANSES scores. There was no significant difference between the pretest and posttest ANSEs "internal emotion management" and "sociality" subscale scores ($p>0.05$). However, there was a significant difference between the pretest and posttest ANSEs total and "auto-regulatory behavior" and "external emotion management" subscale scores ($p<0.05$). In other words, it was found that nursing students' abilities to regulate

Table 2 Participants' Views of the Escape Room Game

Variable (*N* = 42)	Disagree		Neither Agree Nor Disagree		Agree	
	n	%	n	%	n	%
The game helped me comprehend the topic	1	2.4	2	4.8	39	92.8
I enjoyed the game	2	4.8	2	4.8	38	90.4
The game will help me with the course	1	2.4	4	9.5	37	88.1
The game helped me recall and apply relevant information	2	4.8	2	4.8	38	90.4
The game should be included more in nursing studies	2	4.8	1	2.4	39	92.8
The game motivated me to pass the exam	2	4.8	4	9.5	36	85.7
The game helped me think fast and make decisions	1	2.4	1	2.4	40	95.2
The game helped me communicate better	2	4.8	2	4.8	38	90.4

Table 3 Pretest–Posttest ANSES Scores

ANSES	Pretest		Posttest		Statistical analysis* Probability
	$\overline{X} \pm SD$	Median [IQR]	$\overline{X} \pm SD$	Median [IQR]	
Internal emotion management	3.69 ± 0.81	3.7 [1.0]	3.89 ± 0.74	4.0 [0.8]	Z = −1.681 $p = 0.093$
Auto-regulatory behavior	3.36 ± 0.81	3.3 [1.1]	3.58 ± 0.78	3.5 [1.0]	t = −2.113 $\mathbf{p = 0.041}$
External emotion management	3.29 ± 0.79	3.5 [1.0]	3.68 ± 0.93	3.8 [1.1]	Z = −3.410 $\mathbf{p < 0.001}$
Sociality	3.97 ± 0.91	4.0 [1.0]	4.21 ± 0.81	4.0 [1.0]	Z = −1.893 $p = 0.058$
ANSES – Total	3.54 ± 0.56	3.6 [0.8]	3.81 ± 0.51	3.9 [0.6]	t = −3.252 $\mathbf{p = 0.002}$

* The "Paired Sample" test (t-table value) statistics were utilized to compare the measurement values of two dependent groups for normally distributed data. Conversely, the "Wilcoxon" test (Z-table value) statistics were employed to compare the measurement values of two dependent groups for non-normally distributed data

Table 4 Pretest-Posttest CTMS Scores

CTMS	Pretest		Posttest		Statistical analysis* Probability
	$\overline{X} \pm SD$	Median [IQR]	$\overline{X} \pm SD$	Median [IQR]	
Expectancy	4.81 ± 0.66	5.0 [0.9]	4.89 ± 0.83	5.0 [1.3]	Z = -0.893 $p = 0.372$
Attainment	5.21 ± 0.75	5.3 [1.0]	5.40 ± 0.67	5.6 [1.0]	Z = -1.646 $p = 0.100$
Utility	5.09 ± 0.61	5.0 [1.3]	5.24 ± 0.71	5.3 [1.3]	Z = -1.521 $p = 0.128$
Interest	5.15 ± 0.84	5.0 [1.1]	5.36 ± 0.69	5.6 [1.0]	Z = -1.634 $p = 0.102$
Cost	4.61 ± 0.87	4.7 [1.0]	4.91 ± 0.94	5.0 [1.7]	Z = -1.738 $p = 0.082$
CTMS – Total	4.99 ± 0.61	5.1 [0.7]	5.18 ± 0.62	5.2 [0.8]	Z = -2.027 $\mathbf{p = 0.043}$

* The "Wilcoxon" test (Z-table value) statistics were employed to compare the measurement values of two dependent groups for non-normally distributed data

their emotions and manage external emotional responses improved compared to before the intervention.

Table 4 shows the distribution of the participants' pretest–posttest CTMS scores. There was no significant difference between the pretest and posttest CTMS "expectancy," "attainment," "utility," "interest," and "cost" subscale scores ($p > 0.05$).

There was a significant difference between the mean pretest and posttest CTMS total scores ($p < 0.05$). In other words, participants had a significantly higher mean posttest CTMS total score than the pretest score.

Table 5 shows the correlations.

There was a weak/moderate positive correlation between the pretest ANSES "internal emotion management" subscale scores and the pretest CTMS total and CTMS "expectancy," "attainment," "utility," "interest," and "cost" subscale scores ($p < 0.05$).

There was a weak/moderate positive correlation between the pretest ANSEs "sociality" subscale score and the pretest CTMS total and CTMS "expectancy" and "interest" subscale scores ($p < 0.05$).

There was a weak/moderate positive correlation between the pretest ANSEs total score and the pretest CTMS total score and CTMS "expectancy," "interest," and "cost" subscale scores ($p < 0.05$).

There was a positive correlation between the posttest ANSEs "internal emotion management" subscale score and the posttest CTMS total and CTMS "utility," "interest," and "cost" subscale scores ($p < 0.05$). There was a weak positive correlation between the posttest ANSEs "sociality" subscale score and the posttest CTMS total and CTMS "interest" and "cost" subscale scores ($p < 0.05$).

There was a weak positive correlation between the posttest ANSEs total score and the posttest CTMS total and CTMS "utility" and "cost" subscale scores ($p < 0.05$).

Table 5 Correlations

Correlation*(*N* = 42)			**ANSES**				
			Internal emotion management	***Auto-regulatory behavior***	***External emotion management***	***Sociality***	**ANSES – Total**
Pretest	**CTMS**						
	Expectancy	*r*	0.571	0.153	0.268	0.593	0.503
		p	**< 0.001**	0.333	0.086	**< 0.001**	**< 0.001**
	Attainment	*r*	0.448	0.225	0.268	0.111	0.389
		p	**0.003**	0.151	0.086	0.483	**0.011**
	Utility	*r*	0.443	0.064	0.175	0.181	0.280
		p	**0.003**	0.688	0.267	0.252	0.073
	Interest	*r*	0.594	0.025	0.120	0.425	0.399
		p	**< 0.001**	0.875	0.450	**0.005**	**0.009**
	Cost	*r*	0.455	0.121	0.272	0.050	0.327
		p	**0.002**	0.444	0.081	0.754	**0.035**
	CTMS – Total	*r*	0.648	0.200	0.207	0.342	0.512
		p	**< 0.001**	0.204	0.083	**0.026**	**< 0.001**
Posttest	**CTMS**						
	Expectancy	*r*	0.176	−0.069	0.116	0.226	0.119
		p	0.266	0.663	0.464	0.150	0.453
	Attainment	*r*	0.289	0.022	−0.026	0.192	0.182
		p	0.064	0.892	0.871	0.223	0.249
	Utility	*r*	0.375	0.207	0.276	0.208	0.413
		p	**0.014**	0.189	0.077	0.187	**0.007**
	Interest	*r*	0.456	0.003	0.025	0.334	0.229
		p	**0.002**	0.987	0.875	**0.030**	0.144
	Cost	*r*	0.313	0.284	0.253	0.332	0.448
		p	**0.043**	0.069	0.106	**0.031**	**0.003**
	CTMS – Total	*r*	0.409	0.123	0.193	0.305	0.367
		p	**0.007**	0.437	0.220	**0.049**	**0.017**

* Spearman's correlation coefficient was employed to analyze the relationship between two quantitative variables that did not show a normal distribution

Analysis of participants' responses

All participants were asked what they thought about the game. They stated that the game motivated them to think critically and helped them develop academic self-efficacy. One participant said, "*I think the research both helped me develop critical thinking skills and improved my perspective on oncological symptoms*." Another said, "As a nurse, I reckon I really put into practice the roles of being a researcher and a communicator." Participants noted that the game stations on (1) the sequence of intervention for extravasation, (2) cancer staging, and (3) breast cancer symptoms were the most helpful stations that contributed significantly to their learning processes. One participant said, "*If I hadn't played the game, I might have had problems managing oral mucositis, communicating, and staging cancers*." These results showed that the game contributed to their professional lives.

Discussion

This study investigated the impact of an escape room game on oncology nursing students' academic self-efficacy and motivation for critical thinking. The results showed that the game helped participants develop academic self-efficacy and motivated them to think critically. Participants also believed it was a fun game that helped them bridge the gap between theory and practice, think fast, develop communication and collaboration skills, and pass their exams.

Motivation for critical thinking

Nurses need to think critically to provide high-quality care. They must acquire critical thinking skills during their undergraduate years [42, 43]. However, they must be motivated to develop those skills [42]. The results showed that the escape room game motivated participants to develop critical thinking skills. Critical thinking involves asking questions, defining problems, collecting information, evaluating data, and reaching conclusions after reviewing all information [44]. The results showed that the escape room game helped participants receive preliminary information (e.g. pain in the patient's arm, redness, etc.), collect information about the problem (extravasation), evaluate the intervention method (sequence of extravasation intervention), and decide on the intervention (correct ordering of visuals related to extravasation). The Participants stated that the escape room game helped them think critically, solve problems, combine prior knowledge with new information, and put theory into practice. Problem-based learning, concept mapping, and case studies are interventions that allow nursing students to develop critical thinking skills [42, 45]. Research shows that game-based learning also helps students develop critical thinking skills [46–48]. Chang's research, which compared the learning performance of nursing students on ECG, revealed that game-based learning enhanced critical thinking tendencies more than traditional education [48]. Morrell et al. (2020) stated that a cardiovascular-themed educational escape room game promoted critical thinking among nursing students [49]. Similarly,Yang et al. [50] demonstrated that implementing an online game-based escape room focused on maternity care and assessment was more effective than traditional training methods in enhancing nursing students' critical thinking skills [50]. In game-based learning, the type of game is effective on critical thinking [47–50]. The study's results align with existing literature, demonstrating that educational escape room games can enhance both critical thinking tendencies and motivation.

Academic self-efficacy

The results showed that the escape room game increased nursing students academic self-efficacy and [50–52]. In the literature, a one-time escape room session designed to teach high-risk procedures to anesthesia assistants was found to be effective in increasing residents' self-efficacy [51]. In Tinsley et al.'s [52] study, an escape room game featuring puzzles related to aphasia knowledge and skills increased graduate students' self-efficacy in all targeted tasks related to aphasia [52]. Academic self-efficacy is one's belief in one's ability to complete an academic task. One's self-efficacy depends largely on one's performance [53]. Nursing students had higher posttest self-efficacy scores because as they solved the puzzles, they progressed in the game and finished it successfully. People with high self-efficacy are determined to overcome challenges instead of running away from them [54, 55]. One participant said, "*The escape room game helped me learn how to cope with challenges in a fun way*." Students with higher academic self-efficacy exhibit less avoidant, procrastinatory, and panic decision-making behaviors. Participants stated that the escape room game taught them to take their time and make careful decisions. This study results show that universities should integrate escape room games into their curricula to help nursing students develop academic self-efficacy and make informed decisions.

Participants' views of the escape room game

The students stated that the escape room game was useful in understanding the topics related to oncology nursing. It also facilitated the recall, reinforcement, and application of information on the subject. All participants were asked, "Which oncology nursing topics did the escape room game help you understand better?" They responded that the game helped them comprehend all the topics related to oncology nursing. This result is consistent with

the literature [20, 32, 56–58]. The literature indicates that escape rooms can enhance learning experiences, reinforce knowledge, aid in interpreting and applying information to patient care, and increase motivation to learn [32, 48, 56, 57]. Based on these findings, escape room games are thought to have the potential to improve students' learning performance due to their entertaining, motivating, engaging, and educational nature. The participants noted that they enjoyed the escape room game and wanted to see such games introduced into the nursing curriculum. The results also showed that the game helped all participants develop communication and collaboration skills, which is consistent with the literature [29, 32, 56–58]. Communication, teamwork, active learning and focus on the given task are the advantages of an educational escape room [32]. In Kubin's study, one-third of the participants stated that they could only complete the escape room game with peer cooperation [57]. Having two teams competing simultaneously might have stirred up a bit of rivalry, which in turn could have spurred the teams to come together and achieve success. Anguas-Gracia [32] found that students did not believe escape room games could help them pass their exams [32]. However, most of participants agreed that the escape room game could motivate them to prepare for their exams (88.1%−85.7%). The difference in the results may be related to the range of topics covered and game designs.

Limitations

This study has three limitations. First, researchers did not assess academic performance. Second, the data regarding learning relied on self-reports. Third, the study lacked a control group.

Conclusion

The escape room game was an enjoyable and collaborative way to facilitate information recall and transform theory into practice in oncology nursing education. In oncology nursing courses, incorporating an escape room game at the end of the course can boost nursing students critical thinking motivation and enhance their academic self-efficacy. We used a low budget to design the game in the laboratory of the faculty. We spent a little money on the game cards and 3-D letters. It is also possible to reduce costs based on the design of the game and the choice of venue. In this regard, the escape game can be integrated into a classroom, laboratory, or clinical environment on a low budget. The findings indicate that teaching activities based on escape room games have practical value. It is recommended that escape room applications be included together with traditional teaching methods in oncology nursing education. Researchers should recruit different samples to investigate the impact of escape room games on academic self-efficacy and motivation for critical thinking.

Supplementary Information

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Supplementary Material 1.
Supplementary Material 2.
Supplementary Material 3.
Supplementary Material 4.
Supplementary Material 5.

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Authors' contributions
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Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
The study was approved by Ankara Yildirim Beyazit University ethics committee (23.11.2023–09-421). Permission was obtained from Ankara Yildirim Beyazit University Nursing Department (27139605–619-238656). Authorization was received from the authors who developed the scales. Informed consent was obtained from all participants. The study was carried out according to the ethical principles of the World Medical Association's Declaration of Helsinki.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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