The Effects of Film-Based Learning on Students' Interpersonal Problem-Solving Skills and Cognitive Processes

Film Temelli Öğrenmenin Öğrencilerin Kişilerarası Problem Çözme Becerileri ve Bilişsel Süreçleri Üzerindeki Etkileri

Araştırma Research

Ayşe Gül Yavaş[1], Nazan Turan[2]

DOI: 10.17942/sted.1566735

Geliş/Received: 14.10.2024
Kabul/Accepted: 13.11.2025

Abstract

Background: Film-based learning is considered an effective teaching method in higher education.

Aim: This study aimed to examine the effects of film-based learning on nursing students' interpersonal problem-solving and metacognitive skills.

Method: The study was conducted at a state-run university nursing faculty in Türkiye during the 2020–2021 academic year using a pretest/posttest, semi-experimental, non-randomized control group design. The experimental group (n=26) participated in film-based learning sessions for 10 weeks, which involved watching and discussing films related to health concepts. No intervention was provided for the control group (n=25). The Metacognition and Interpersonal Problem-Solving Scale was administered to both groups before and after the intervention.

Results: No statistically significant differences in the experimental and control groups regarding their sociodemographic characteristics (p>0.05) were found. In the control group, no significant change was observed in metacognition and problem-solving scale scores (p>0.05). In contrast, the experimental group significantly improved metacognition and problem-solving scores (p<0.001).

Conclusion: Film-based learning improved nursing students' metacognitive and interpersonal problem-solving skills.

Keywords: problem solving, metacognition, nursing education

Özet

Arka Plan: Film temelli öğrenme, yükseköğretimde etkili bir öğretim yöntemi olarak görülmektedir.

Amaç: Bu çalışma, film temelli öğrenmenin hemşirelik öğrencilerinin kişilerarası problem çözme becerileri ve üst bilişsel becerileri üzerindeki etkisini incelemeyi amaçlamaktadır.

Yöntem: Çalışma, 2020–2021 eğitim-öğretim yılında Türkiye'deki bir devlet üniversitesinin hemşirelik fakültesinde, ön test/son test yarı deneysel ve rastgele seçilmemiş kontrol gruplu bir desenle yürütülmüştür. Deney grubu (n=26) 10 hafta boyunca sağlıkla ilgili kavramları ele alan filmleri izlemiş ve tartışmıştır. Kontrol grubuna (n=25) herhangi bir müdahale yapılmamıştır. Müdahale öncesi ve sonrası her iki gruba da Üstbiliş Ölçeği ve Kişilerarası Problem Çözme Ölçeği uygulanmıştır.

Bulgular: Çalışma ve kontrol grupları arasında sosyo-demografik özellikler açısından istatistiksel olarak anlamlı bir fark bulunmamıştır (p>0,05). Kontrol grubunun üstbiliş ve problem çözme ölçek puanlarında anlamlı bir değişiklik görülmezken (p>0,05), deney grubunda her iki ölçekte de anlamlı bir artış saptanmıştır (p<0,001).

Sonuç: Film temelli öğrenme, hemşirelik öğrencilerinin üstbilişsel ve kişilerarası problem çözme becerilerini geliştirmede etkili bulunmuştur.

Anahtar Sözcükler: problem çözme, üstbiliş, hemşirelik eğitimi

[1] *Dr. Öğr. Üyesi, Ankara Üniversitesi, Hemşirelik Fakültesi, Hemşirelik Bölümü (Orcid no: 0000-0002-7061-7757)*
[2] *Doç. Dr., Gazi Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Sağlık Bakım Hizmetleri Bölümü (Orcid no: 0000-0001-9251-7282)*

Introduction

Interpersonal problems are situations in which at least one of the interacting parties perceives a discrepancy between the current form of interaction and the ideal form; this discrepancy creates tension, and attempts to relieve this tension are blocked (1). These problems are frequently experienced by healthcare professionals, particularly nurses, working under stressful conditions. For instance, Black (2017) reported that nurses encounter interpersonal problems with other nurses, supervisors, and healthcare personnel (2).

Studies have shown that nurses face interpersonal communication problems not only in their professional lives but also in their academic lives. For example, McKenna et al. (2003) revealed that nurses experienced more interpersonal issues in the first year of their professional life than other healthcare professionals (3). Furthermore, Byeon and Kim (2009) found that nursing students also experienced more interpersonal problems and communication difficulties in academic settings than in other departments (4). Another descriptive study conducted with nursing students reported that interpersonal issues were associated with ego resilience and aggression. The authors recommended developing training programs to strengthen ego resilience and manage aggression to reduce interpersonal problems among nursing students (5). Kalemkuş (2021) highlighted that metacognition is important in solving interpersonal problems and coping with challenges (6).

Metacognition refers to being aware of and controlling one's cognition (7). It significantly regulates cognitive processes for functional and adaptive purposes (8) and influences how individuals cope with dysfunctional thinking. People hold positive and negative beliefs (metacognitions) about their thoughts (dysfunctional cognitions), which affect how they evaluate events. Such metacognitions can lead to maladaptive responses and psychological difficulties (9). A study examining the mental health of general hospital nurses found that interpersonal relationships significantly influenced nurses' mental health, and negative interpersonal relationships were predictors of hostility and interpersonal sensitivity (10).

Baker (2010) emphasized that metacognitive skills should be developed and promoted, particularly in educational and learning environments (7). In health education, audio-visual methods are widely used, and one innovative approach is film-based learning. Donnelly and Frawley (2020) described film-based learning as an engaging yet challenging active learning method in which students build interpersonal connections, critically reflect, analyze, and discuss evolving situations, and question underlying assumptions (11).

Film-based learning involves discussing the film's topic with students before and after viewing, encouraging reflection, linking learning with experience, and fostering empathic behaviors and compassion skills (12). Films help individuals cope with their problems (13), raise awareness of personal challenges (14), and most importantly, support metacognitive development by encouraging self-questioning, such as "What would I have done?" (11). They also promote problem-solving skills (15,16). Although many studies have examined the use of films in education (12–14,19,20), no studies have specifically explored the effects of film-based learning on interpersonal problem-solving skills among nursing students. In this context, this study aimed to examine the impact of film-based learning on nursing students' interpersonal problem-solving and metacognitive skills.

Materials and Methods

Study Design

The study was designed as a quasi-experimental intervention with a pretest–posttest design.

Ethical Approval

The study protocol was approved by the institution where the study was conducted and by the university's ethics board (Approval number: 2021/07, dated February 10, 2021). All participants provided written informed consent. The study was conducted per the principles of the Declaration of Helsinki.

Participants and Randomization

The study population consisted of 191 third-year nursing students enrolled in the faculty of a state university in Turkey during the 2020–2021 academic year. The program was announced to all third-year nursing students, and 51 students who met the inclusion and exclusion criteria were

enrolled in the study. The inclusion criteria were being a student in the department where the study was conducted, volunteering to participate, and not having received similar training before.

Exclusion criteria included having previously received such training, not having completed basic nursing education, or not volunteering to participate in the study. In addition, based on our prior experience with online education during the COVID-19 pandemic, we anticipated that some students might have limited internet access or encounter connectivity problems due to their geographical location. To ensure full participation in the intervention and maintain data integrity, insufficient internet access and unwillingness to attend all intervention sessions regularly were therefore designated exclusion criteria before randomization. This approach was intended to minimize incomplete exposure to the intervention and reduce unpredictable outcome variability. No artificial intelligence (AI)–assisted technologies (e.g., Large Language Models [LLMs], chatbots, or image creators) were used in the production of the submitted work.

Fifty-one volunteer students were stratified by gender and randomly assigned to the intervention (n=26) and control (n=25) groups using computerized random number generation. Throughout the randomization and data analysis processes, there was no communication between the researchers and the participants, and the researcher conducting the statistical analyses employed a single-blind approach (Figure 1).

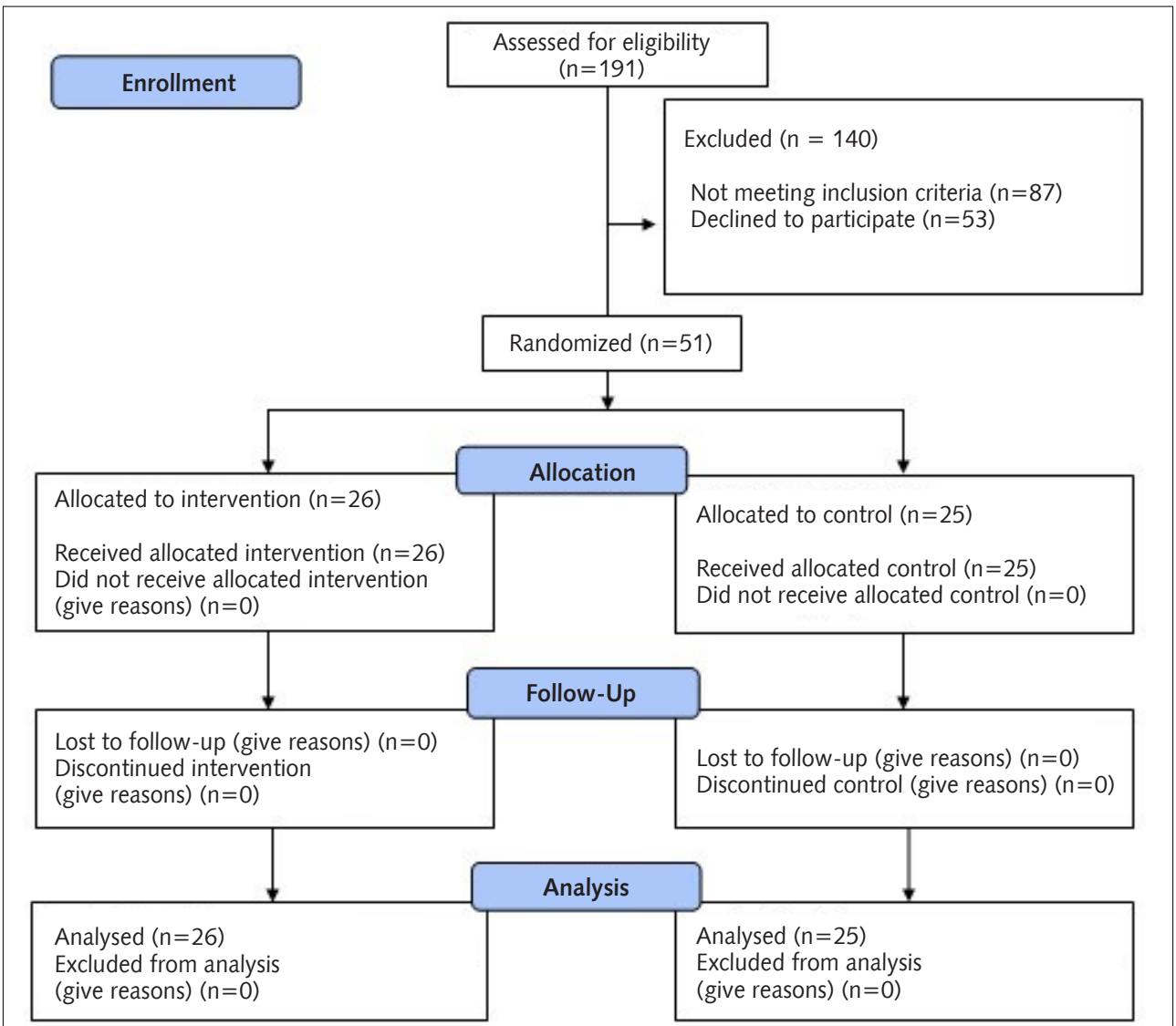

Figure 1. Selection criteria and methodology

Data Collection Tools

We collected data from the Participant Information Form, Metacognition Scale (MCS), and Interpersonal Problem-Solving Inventory (IPSI).

Participant Information Form

The researchers developed this form and included seven questions regarding age, sex, family structure, place of residence, number of siblings, family income level, and academic achievement.

Metacognition Scale (MCS)

The original name of the scale developed by Cartwright-Hatton and Wells (2004) is the Meta-Cognitions Questionnaire (MCQ) (8). The scale consists of 30 items and five sub-dimensions: positive beliefs, uncontrollability and danger, cognitive confidence, need to control thoughts, and cognitive self-consciousness. Each item is scored on a 4-point Likert scale ranging from "(1) strongly disagree" to "(4) strongly agree." Total scores range from 30 to 120, with higher scores indicating higher metacognitive activity. The Cronbach's alpha internal consistency coefficient for the original scale was 0.93. In this study, we used the version adapted by Tosun and Irak (2008), for which we calculated a Cronbach's alpha of 0.88 (17).

Interpersonal Problem-Solving Inventory (IPSI)

Developed by Çam and Tümkaya (2007) to assess interpersonal problem-solving approaches and behaviors specific to Turkish culture (18), the IPSI consists of 50 items and five sub-dimensions: negative approach to problems, constructive problem-solving, insecurity, avoidance, and persistence. Each item is scored on a 5-point Likert scale ranging from "(1) totally disagree" to "(5) totally agree." Higher scores on each subscale indicate better interpersonal problem-solving skills. Cronbach's alpha coefficients for the subscales ranged from 0.67 to 0.91 in the original study, while in our study they ranged from 0.82 to 0.91.

Film Selection

In selecting the films, we first reviewed studies in the literature (12,19,20). We then created a list of films used in psychiatric nursing courses over the past 10 years and health-related courses for the past three years. At the end of each semester, students rated these films on a scale from 1 ("I didn't like it at all") to 5 ("I loved it"). We ranked the films according to these ratings and selected the highest-scoring films relevant to fundamental concepts in health and nursing (Table 1).

Program Implementation

Because the program coincided with the COVID-19 lockdown, all sessions were conducted online via the university's learning management system. Each week for 10 weeks, the intervention group watched one film and then participated in a 30–45-minute discussion on a health-related concept. Before the first session, both groups completed the MCS and IPSI, which required approximately 25–30 minutes. For each film, information on the film's topic match and points to consider during viewing was provided in advance via the online system.

The first author, with 12 years of experience using films in education, holds a doctorate in psychiatric nursing and has published studies on this subject. A total of 10 films (average duration: 2.5 hours each) were viewed, followed by discussions encouraging critical thinking, self-reflection, and interpersonal communication (11,12,14). The researcher screened all films to ensure complete adherence to the intervention. At the end of the 10-week program, both groups again completed the MCS and IPSI.

The control group received no intervention during the study period and continued their regular coursework. Before the study began, they were informed that the same program would be offered after the study; however, none requested it afterward, so no additional intervention was conducted.

Statistical Analysis

Data analyses were performed using IBM SPSS Statistics 26.0 (IBM Corp., Armonk, NY, USA). The Shapiro–Wilk test and normality plots were used to assess the distribution of numerical variables. Descriptive statistics were reported as mean±standard deviation for continuous variables and frequency (%) for categorical variables.

Group differences in age were examined using independent-samples t-tests, while sex, education level, and marital status were compared using Yates's chi-square and Fisher's

Table 1. List of films watched			
Weeks	**Film Watched (Year/Director)**	**Subject**	**Basic Concept Discussed**
Week 1	Taare Zameen Par (2007/Aamir Khan)	It is about the life and success of a child with a perception problem whose life is changed by an art teacher after being sent to a boarding school to learn how to study.	Human
Week 2	A Beautiful Mind (2001/Ron Howard)	It is about the communication problems a young man with schizophrenia experiences with those around him.	Health and environment
Week 3	Wit (2001/Mike Nichols)	Based on the life story of a literature professor who began to question his life and evaluate his priorities after being diagnosed with cancer	Nursing
Week 4	Dangal (2016/Aamir Khan)	It is about a former wrestler's struggle to turn his daughters into wrestlers to win a gold medal for his country.	Strength/ weakness
Week 5	"Nadide" Life (2015/Çağan Irmak)	It is about how the life of Nadide, who lost her life partner of 30 years, changes with the news she reads in the newspaper.	The self
Week 6	28 Days (2000/Betty Thomas)	It is about a person who has to attend a 28-day rehabilitation program due to her drinking problem, and discover herself.	Dependency/ independence
Week 7	As Good As It Gets (1997/James L. Brooks)	It is about a famous novelist who is racist, anti-semitic, selfish, obsessive-compulsive, and does not like people, his homosexual neighbor, and a waitress forming an unlikely friendship.	Anxiety
Week 8	Are we OK? (2013/Çağan Irmak)	It is about the life of a young person who is physically disabled and therefore dependent on his mother.	Hope/despair
Week 9	Butterflies (2018/Tolga Karaçelik)	It tells the story of three siblings who were sent to different relatives after their mother's suicide and, about 20 years later, were summoned to their remote village by their estranged father, only to learn when they arrive that their father had died.	Loss
Week 10	Forrest Gump (1994/Robert Zemeckis)	It is about a mentally and physically challenged boy who achieves incredible success from his life's bitter and sweet surprises.	Stigmatizing

exact tests. Box's M test confirmed the homogeneity of variance–covariance matrices for pre- and post-intervention scores. Therefore, two-way mixed ANOVA was used to evaluate within- and between-group changes in scores over time. We reported p-values for group × time interactions and adjusted p-values for intra-group and inter-group comparisons. Statistical significance was set at $p<0.05$.

Findings

All students in the experimental group participated in the film sessions (participation rate=100%). The mean age of the control and experimental groups was 22.0±1.8 years and 23.5±6.7 years, respectively. We found that 77.7% (n=20) of the control group and 76.9% (n=20) of the experimental group were female. Regarding academic achievement, 48.0%

(n=12) of the control group and 88.5% (n=23) of the experimental group were classified as "good." There were no statistically significant differences between the two groups regarding sociodemographic characteristics (p>0.05, Table 2).

Table 3 shows the distribution of Metacognition Scale (MCS) scores of the groups before and after the training program. The pre-training scale scores of the control group were higher than the experimental group scale scores (all InG p-values >0.05 for pre-training). We also found no significant change in the scale scores over time (all IG p-values >0.05) in the control group. In the experimental group, however, we noticed a decrease in the Uncontrollability and Danger scores and a statistically significant increase in all other scores (all IG p-values <0.001). The group-time interaction effect was also statistically significant for all scores (all p-values <0.001). The pre-training scale scores of the control group were higher than the experimental group scale scores (all InG p-values >0.05 for pre-training).

Table 4 shows the distribution of the Interpersonal Problem-Solving Scale (IPS) scores by group. The group comparison revealed that the control group scores were higher than the experimental group scores. We observed a statistically significant decrease in the scores for Negative Approach to the Problem, Lack of Confidence, and Not Taking Charge after the training in the experimental group and a substantial increase in the Constructive Problem-Solving and Dogged-Persistent Approach scores (all IG p-values <0.001). In contrast, all scores remained similar in the control group (all IG p-values >0.05).

Table 2. Sociodemographic characteristics of the participants

	Control (n=25)	Study(n=26)	p value
Age (year), M±SD	22.0±1.8	23.5±6.7	0.719
n (%)			
Sex			1.000
Male	5 (22.3)	6 (23.1)	
Female	20 (77.7)	20 (76.9)	
Family Structure			
Extended family	15 (60.0)	8 (30.8)	0.912
Nuclear family	10 (40.0)	18 (69.2)	
Place of Residence			
City	22 (88.0)	25 (96.2)	0.738
Town	3 (12.0)	1 (3.8)	
Number of Siblings			
0	0 (0.0)	2 (7.7)	0.804
1	7 (28.0)	9 (34.6)	
≥2	18 (72.0)	15 (57.7)	
Family income level (month)			
Income>Expense	3 (12.0)	3 (11.5)	0.687
Income=Expense	16 (64.0)	15 (57.7)	
Income<Expense	6 (24.0)	8 (30.8)	
Academic achievement			
Middle	13 (52.0)	23 (88.5)	0.679
High level	12 (48.0)	3 (11.5)	

Table 3. Distribution of MCS scores by group				
	Control (n=25) M±SD	Study (n=26) M±SD	InG p-value	I p-value
Positive Beliefs				**<0.001**
T0	14.27±3.10	11.39±2.14	0.449	
T1	14.04±3.62	15.88±3.24	**<0.001**	
IG p-values	0.065	**<0.001**		
Uncontrollability and Danger				**<0.001**
T0	11.77±3.21	9.11±2.87	0.217	
T1	11.35±2.58	8.13±2.00	**<0.001**	
IG p-values	0.479	**<0.001**		
Cognitive Confidence				**<0.001**
T0	14.12±3.10	10.68±3.09	0.281	
T1	14.04±3.85	13.58±4.76	**<0.001**	
IG p-values	0.346	**<0.001**		
Need to Control Thoughts				**<0.001**
T0	14.41±2.70	12.25±2.54	0.119	
T1	14.42±3.42	16.92±3.24	**<0.001**	
IG p-values	0.159	**<0.001**		
Cognitive self-Consciousness				**<0.001**
T0	16.24±2.23	14.93±1.92	0.294	
T1	16.13±1.67	19.13±2.11	**<0.001**	
IG p-values	0.119	**<0.001**		

T0: pre-training, T1: post-training, InG: Intergroup, IG: In-group, I: Interaction, M±SD: Mean ± Standard Deviation, $p<0.05$

Discussion

This study examined the effect of the educational method involving watching and discussing films on nursing students' interpersonal problem-solving skills and metacognitive processes. The study showed no statistically significant difference between the experimental and control groups regarding sociodemographic characteristics. This finding was attributed to the homogeneous distribution of the experimental and control groups and the fact that the university where the study was conducted was a state university with students from many regions and different sociocultural and economic levels.

The study's most striking finding is that the control group's MCS and IPSS scores were higher than the experimental group's scores before the program. This is considered an indicator of bias and was addressed by the second author, who had no connection or communication with the participants, to prevent selection bias in the study by creating a random sequence of integers on a computer. However, this may be related to performance bias and can be explained by the fact that the participants in the control group knew which group they were in, as reflected in the evaluation materials.

The literature highlights the numerous effects of films on students (19-22). A study on nursing students revealed that watching and discussing films contributed to students' awareness, development, change, and motivation, supporting cognitive, emotional, and behavioral learning (19). Another study conducted on nursing students determined that watching films facilitated students' understanding of the topics covered, increased their awareness, and reflected these findings in their care practices

Table 4. Distribution of IPS scores by group				
	Control (n=25) M±SD	**Study (n=26) M±SD**	**InG p-value**	**I p-value**
Negative Approach to the Problem				**<0.001**
T0	49.23±12.35	47.75±14.50	0.151	
T1	49.50±13.35	41.11±9.32	**<0.001**	
IG p-value	0.763	**<0.001**		
Constructive Problem Solving				**<0.001**
T0	55.81±8.39	53.38±5.61	0.146	
T1	56.00±7.96	56.64±7.24	**<0.001**	
IG p-value	0.979	**<0.001**		
Insecurity				**<0.001**
T0	16.81±4.76	15.75±4.30	0.254	
T1	16.81±4.22	13.79±4.30	**<0.001**	
IG p-value	0.714	**<0.001**		
Not Taking Charge				**<0.001**
T0	13.23±4.76	14.29±3.92	0.512	
T1	13.19±4.30	13.96±3.96	**<0.001**	
IG p-value	0.792	**<0.001**		
Dogged/persistent approach				**<0.001**
T0	19.65±4.46	19.25±4.02	0.039	
T1	19.69±4.11	25.32±2.51	**<0.001**	
IG p-value	0.665	**<0.001**		
T0: pre-training, T1: post-training, InG: Intergroup, IG: In-group, I: Interaction, M±SD: Mean ± Standard Deviation, p<0.05				

(20). Similarly, another study reported that most nursing students found watching films complementary or more useful than a lecture (21). A systematic review conducted in 2024 emphasized that films contributed to medical students' understanding of various areas, such as medical professionalism, bioethics, and critical thinking (22). Other studies indicate that watching films encourages university students to think critically, helps them acquire critical thinking skills (23), and enhances their ability to take responsibility and problem-solving (24).

This study used a 10-week educational program that included watching and discussing films and demonstrated that this method impacted nursing students' interpersonal relationships and problem-solving skills. The posttest showed significant decreases over time in the experimental group's scores for the metacognition scale's sub-dimensions of negative approach to the problem, lack of self-confidence, and not taking charge, and significant increases in the sub-dimensions of constructive problem-solving and a dogged persistent approach.

The change in the experimental group's IPPS sub-dimension scores may be because most participants were from nuclear families, had siblings, were female, and had equal incomes and expenses. This is because sociocultural factors such as family type and economic status, parental attitudes towards gender roles, and number of siblings matter when raising children, with family structure, in particular, directly affecting individuals' cognitive-behavioral makeup and problem-solving skills (25). Evidence has shown that children raised in nuclear families have better problem-solving

skills than children raised in extended families (25). At the same time, women are better than men at developing and implementing solutions to problems (26).

The study also showed that this training method influences nursing students' metacognitive processes. The results showed a decrease in the experimental group's uncontrollability and danger scores and a significantly positive increase in the positive beliefs, cognitive trust, the need to control thoughts, and cognitive awareness scores. We believe that this outcome has to do with the positive thoughts generated by women and the fact that they have greater awareness than men because impulse control and mental skills are related to age and gender, and these skills increase with age (27). At the same time, women have lower impulsivity/inattention scores than young men (28) and are particularly more skilled than men in emotional awareness and negotiation (29). Furthermore, women have greater metacognitive awareness than men and are more skilled in planning, motivation, detailed learning, and analysis (30). Cognitive confidence, on the other hand, is associated with controlling mental activities and is known to be affected by negative beliefs and control behaviors in women (31).

In light of all this information, the films watched by the experimental group and the following discussions led to improvements in two sub-dimensions of metacognition, namely metacognitive knowledge and metacognitive regulation, by increasing students' awareness and changing their perspectives. The results also suggest that the films watched by the students and the subsequent discussions about them influenced their critical thinking skills and critical perspective, allowing them to ascribe new meanings to events, thus contributing to their interpersonal problem-solving skills. This is because the use of films in education is an effective method that allows learning by sharing emotions, discovering one's own and another's feelings, and improving problem-solving and critical thinking skills by providing a safe environment for problem-solving (13).

Strengths and Limitations

This study has several limitations. First, due to the COVID-19 pandemic, the study was conducted online, and criteria for participation in the intervention process—including adequate internet access and a commitment to attend all intervention sessions—were established before randomization. Although this approach was chosen to maintain data integrity, the sample size was constrained by voluntary participation, thereby limiting the generalizability of the results.

Second, despite independent randomization, the higher MCS and IPSI scores in the control group compared to the intervention group in the pretests suggest that complete balance was not achieved between the groups at baseline. Participants' awareness of their group status may have introduced an expectation effect or performance bias during the response process, potentially affecting the study's internal validity.

Third, blinding was applied only during the data analysis phase, whereas participants were aware of their group status during the pretests. Future studies are recommended to implement blinding strategies for baseline measurements and to ensure better balance between groups at baseline.

Finally, only 51 of the 191 students participated in the study, limiting the findings' generalizability. Since the sample represented only a quarter of the population, the results cannot be generalized to all students.

Conclusions and Recommendations

The study determined that films used for educational purposes in nursing affected students' interpersonal problem-solving skills and metacognitive processes. In light of the results of this study, it is recommended that an archive be created for films that can be used in nursing education, that follow-up studies be conducted with larger sample groups to determine the long-term effects of films used in nursing education, that studies including a qualitative dimension be carried out, and that similar studies be conducted with larger sample groups from different universities.

Contact: Ayşe Gül Yavaş
E-Mail: ayavas@ankara.edu.tr

Referances

1. Öğülmüş S. Interpersonal problem-solving skills and training. 6th Ed. 2018, Ankara: Nobel Akdemi.
2. Black BP. Professional nursing. Concepts and challenges. 8th Ed. 2017, Missouri: Elsevier/ Saunders.
3. McKenna BG, Smith NA, Poole, & Coverdale JH. Horizontal violence: Experiences of registered nurses in their 1st year of practice. J Adv Nurs. 2003;2(1):90-6. https://doi.org/10.1046/j.1365-2648.2003.02583.x.
4. Byeon YS, Kim MY. Interpersonal conflict experiences of nurses. J. Qual. Res. 2009;10:142 51.
5. Lee S, Ahn HY, Choi HS. Effects of ego-resiliency on interpersonal problems among nursing students: The mediating effect of aggression. Healthcare (Basel). 2022;10(12):2455-66. https://doi.org/10.3390/healthcare10122455.
6. Kalemkuş J. Bilmeyi bilme: Üstbiliş. Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi Dergisi. 2021;42:471-95.
7. Baker E, Peterson PL, McGaw B. Metacognition. International Encyclopedia of Education. 2010. Elsevier Ltd.
8. Cartwright-Hatton S, Wells A. A short form of the Metacognitions Questionnaire: Properties of the MCQ-30. Behav Res Ther. 2004;42(4):385-96. https://doi.org/10.1016/S0005-7967(03)00147-5.
9. Casale S, Musicò A, Spada MM. A systematic review of metacognitions in Internet Gaming Disorder and problematic Internet, smartphone, and social networking sites use. Clin Psychol Psychother. 2021;28(6):1494-508.
10. Delgado C, Roche M, Fethney J, Foster K. Workplace resilience and emotional labour of Australian mental health nurses: Results of a national survey. Int J Ment Health Nurs. 2020;29(1):35-46. https://doi.org/10.1111/inm.12598.
11. Donnelly P, Frawley T. Active learning in mental health nursing: use of the Greek chorus, dialogic knowing, and dramatic methods in a university setting. Nurse Educ Pract. 2020;45:102798.
12. Shankar PR. Cinemeducation: Facilitating educational sessions for medical students using the power of movies. Archives of Medicine and Health Sciences. 2019;7(1):96-103. https://doi.org/10.4103/amhs.amhs_30_19.
13. Mangot AG, Murthy VS. Cinema: A multimodal and integrative medium for education and therapy. Annals of Indian Psychiatry. 2017;1:51-3. https://doi.org/10.4103/aip.aip_13_17.
14. Eğeci İS, Gençöz F. The use of cinematherapy in coping with relationship problems. Art in Psychotherapy. 2017;53:64–71. https://doi.org/10.1016/j.aip.2017.02.004.
15. Irawati YR, Bariyyah K, Soejantoe L, Pambudi P. Movie in guidance and counseling service: Could it help students to improve their problem-solving skills? Konselor. 2020;9(1):15-20. https://doi.org/10.24036/0202091105933-0-00.
16. Alvarez CM, Taylor KA, Rauseo NA. Creating thoughtful salespeople: Experiential learning to improve critical thinking skills in traditional and online sales education. Marketing Education Review. 2015;25(3):233-43. https://doi.org/10.1080/10528008.2015.1044859.
17. Tosun A, Irak M. Turkish Adaptation of Metacognition Scale-30, validity, reliability, relationship with anxiety and obsessive-compulsive symptoms. Turkish Journal of Psychiatry. 2008;19(1):67-80. Available at: https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=02f8443cebe9cdd0d63052039e9e60a74ed53469. Accessed: August 23, 2023.
18. Çam S, Tümkaya S. Development of the interpersonal problem solving inventory (IPSI): Validity and reliability study. Turkish Psychological Counseling and Guidance Journal. 2007;3(28):95-111. Available at: https://dergipark.org.tr/en/pub/tpdrd/issue/21448/229735.
19. Ayhan AGY, Çekiç Y, Ançel G. Psychiatric nursing education: Films and reflections. Anatolian Journal of Psychiatry. 2018;19(4):362-9. https://doi.org/10.5455/apd.285233.
20. Terzioğlu C, Eskiyurt R, Özkan, B. Psikiyatri hemşireliği eğitiminde sinema filmi izletilmesi yöntemi ile öğrencilerin bakım uygulamalarındaki farkındalıklarının araştırılması. Sağlık Bilimleri ve Meslekleri Dergisi. 2017;4(3):149-61. Available

at: https://dergipark.org.tr/tr/pub/hsp/issue/30957/304904. Accessed: September 02, 2025.
21. Susanto, Tantut; Yunanto, Rismawan Adi; Muhammad Nur, Kholid Rosyidi. Cinema education using family films for improving the ability of nursing students in language and communication ability in Family Nursing Care: A pilot study. Education for Health. 2021;34(3):120-1| doi: 10.4103/efh.EfH_64_20
22. Piqué-Buisan J, Sorribes E & Cambra-Badii I. Exploring the impact of using cinema and TV series in medical education: a systematic review. Medicina Clínica Práctica. 2024;7(2):100421.
23. Kaşkaya A, Çavuşoğlu F. Developing the critical thinking skills in pre-service primary school teachers: Application of school and teacher themed movies. International Online Journal of Educational Sciences. 2020;9(3):842-61. https://doi.org/10.15345/iojes.2017.03.018.
24. Khaldi Z, Ameziane H. The effectiveness of using films in Algerian EFL classes to develop 21st-century (4Cs) skills. Algerian Journal of Research and Studies. 2023;6(1):387-98. Available at: https://www.researchgate.net/profile/Zeyneb-Khaldi-2/publication/367656313_The_Effectiveness_of_Using_Films_in_Algerian_EFL_Classes_to_Develop_21st_Century_4Cs_Skills/links/63da4dc6c97bd76a8251b2ce/The-Effectiveness-of-Using-Films-in-Algerian-EFL-Classes-to-Develop-21st-Century-4Cs-Skills.pdf. Accessed August 23, 2023.
25. Zahra ST, Kamal A. Family structure and children's problem-solving ability. FWU Journal of Social Sciences. 2013;7(1):67-72.
26. Setyawati Y, Afandi A, Titin T. Mourtos's Problem-Solving Skills: A view based on gender. In the International Journal of Science and Applied Science: Conference Series. 2020;4(1):91-8. Available at: https://jurnal.uns.ac.id/ijsascs/article/view/49461. Accessed August 23, 2023.
27. Liu B, Luo W, Mo Y, Wei C, Tao R, Han M. Meta-analysis of related factors of impulse control disorders in patients with Parkinson's disease. Neuroscience Letters. 2019;707:134313.
28. D'Zurilla TJ, Maydeu-Olivares A, Kant GL. Age and gender differences in social problem-solving ability. Personality and Individual Differences. 1998;25(2):241-52. https://doi.org/10.1016/S0191-8869(98)00029-4.
29. Largo-Wight E. Gender differences in problem-solving abilities: Implications for health promotion. In The 132nd Annual Meeting, 2004. Available at: https://aphanew.confex.com/apha/132am/techprogram/paper_87189.htm. Accessed September 20, 2023.
30. Asy'ari M, Da-Rosa CTW. Prospective teachers' metacognitive awareness in remote learning: Analytical study viewed from cognitive style and gender. International Journal of Essential Competencies in Education. 2022;1(1):18-26. https://doi.org/10.36312/ijece.v1i1.731.
31. Lenzo V, Toffle ME, Tripodi F, Quattropani MC. Gender differences in anxiety, depression, and metacognition. The European Proceedings of Social & Behavioural Sciences. 2016;9:1-6. Available at: https://www.europeanproceedings.com/files/data/article/39/830/article_39_830_pdf_100.pdf. Accessed June 12, 2023.