

Abstract Book



2nd INTERNATIONAL

ONCOLOGY NURSING ASSOCIATION CONGRESS



İstanbul
Bilgi Üniversitesi

07-09 MAY 2026

Istanbul, Türkiye



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2nd International Oncology Nursing Association Congress Abstract Book

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Oncology Nursing Association

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Congress

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2nd International Congress of Oncology Nursing Association
07 - 09 May 2025 | Istanbul, Türkiye



Prof. Dr. Perihan GÜNER

President of Oncology Nursing Association

Congress President

Dear Colleagues,

It is my great pleasure and honour to invite you to the 2nd International Oncology Nursing Association Congress, which will be held on May 7-9, 2026, and hosted by Istanbul Bilgi University. This year, we are organising our congress around a theme that best reflects the essence of oncology nursing: **"Strength, Science, and Compassion: Oncology Nursing."**

This theme brings together three universal values at the core of our profession-empowerment through scientific knowledge, compassionate and humane care, and the strengthening of professional identity. In advancing cancer care guided by science, we also aim to reaffirm the essential value that compassion brings to human life. Throughout the congress, we will provide a strong platform for sharing knowledge, discussion, and collaboration under the following subthemes:

- Scientific Innovations and Integration into Clinical Practice
- Empathy, Meaning, and Compassion-Based Care
- Digital Transformation, Innovative Technologies, and Clinical Decision Support Systems
- Multidisciplinary Collaboration and Holistic Patient-Centred Care
- Global Collaborations in Oncology Nursing
- Leadership, Empowerment, and Professional Identity

The congress will bring together oncology nurses, academicians, patient associations, multidisciplinary healthcare teams, young researchers, and students to exchange knowledge and experiences. Through inspiring "Success Stories" sessions, we will witness how nurses touch the lives of individuals living with cancer. By integrating scientific innovation, digital transformation, cultural sensitivity, and compassion-centred approaches, this congress will serve as a significant milestone in shaping the future of oncology nursing.

We would be truly delighted to welcome you to this meaningful event, where you can learn, share, and grow together. Let us build the future of oncology nursing, guided by science and inspired by compassion.



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Prof. Dr. Gülşen TERAKEYE

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*Listed in chronological order of presidency, ** Names are listed alphabetically.



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Assoc. Prof. Mine YURDAKUL

Dr. Darcy BURBAGE
Nurse Specialist Lorraine GROVER
Nurse Specialist Nikolina DODLEK
Nurse Specialist Annie YOUNG

*Names are listed alphabetically.



INTERNATIONAL SPEAKERS



Lorraine Grover is a Psychosexual Nurse Specialist with extensive experience in sexual health and cancer care. After qualifying as a nurse from St Bartholomew's Hospital and as a psychosexual therapist in 2003, she developed a particular interest in supporting individuals affected by prostate cancer and its impact on sexual well-being. During the 1990s, she worked as a Research Sister involved in clinical trials that contributed to the development of Viagra. Lorraine has played a pioneering role in reducing stigma surrounding sexual health after prostate cancer, becoming the first Clinical Nurse Specialist to speak nationally for Prostate Cancer UK on "Sex and the Prostate" in 2009. She has served as trustee and treasurer of the Sexual Advice Association and represents the UK within the European Society for Sexual Medicine. An award-winning practitioner, author, educator, and advisor, Lorraine continues to lecture internationally, provide clinical support, and advocate for improved sexual health and quality of life among cancer survivors and their partners.



Nikolina Dodlek is a Research Fellow at Cyprus University of Technology and Project Manager of the INTERVENE, a European initiative focused on advancing health literacy and cancer prevention and care across Europe. She has over 15 years of professional experience in cancer nursing, supportive care, healthcare management, and international project coordination, including leadership roles within European oncology and healthcare initiatives. Her clinical and academic work focuses on digital health transformation in oncology, health literacy, artificial intelligence, virtual reality interventions, supportive cancer care, and healthcare workforce education. Her current research particularly explores the use of innovative technologies to improve psychological support, patient engagement, communication, and quality of care for patients with cancer, survivors, caregivers, and healthcare professionals.



Prof Cherith Semple (PhD, BSc (Hons) Nursing, RN, FHEA) is a Professor of Clinical Cancer Nursing at Ulster University / South Eastern Health and Social Care Trust, which is a joint clinical academic appointment. She has over 25 years experience supporting patients and carers with head and neck cancer, receiving the British Head and Neck Oncologist Lifetime Achievement award in 2023. Cherith leads two programmes of research, supported by successful grant acquisition, which focuses on post-treatment quality of life for patients with head and neck cancer and the support needs of families impacted by parental care. She has authored over 70 peer-reviewed papers in both these topic areas. Amongst other achievements she was presented with the Northern Ireland RCN Nurse of the Year award in 2015 and a MBE as part of the Queen's Honours List in 2017 and UKONS leadership award in 2025.



Professor Julia Downing is an experienced cancer and palliative care nurse, advocate, educator, and researcher. She serves as Chief Executive of the International Children's Palliative Care Network (ICPCN) and holds honorary and visiting academic appointments in Uganda, Serbia, and the UK. With more than 25 years of international experience across Africa, Eastern Europe, the UK, and other regions, she has made significant contributions to global children's palliative care, research, education, and policy development. Professor Downing serves on the boards of several NGOs, including the International Society of Nurses in Cancer Care, works closely with the World Health Organization, and has authored numerous publications while regularly presenting her work at international conferences. Her leadership has played a key role in advancing access to high-quality palliative care services for children and families worldwide.



Annie Young is an internationally recognized nurse leader and researcher with extensive experience in oncology nursing and supportive cancer care. She serves as Emerita Professor of Nursing at the University of Warwick and Honorary Nurse Consultant at University Hospitals Coventry and Warwickshire NHS Trust, United Kingdom. Throughout her career, she has supported multidisciplinary teams in developing research initiatives and securing funding to advance supportive care for people with cancer. Her key areas of interest include cancer-associated thrombosis, prevention of chemotherapy-induced alopecia, and cancer prehabilitation. Annie is committed to mentoring oncology professionals worldwide and strengthening oncology nursing education, particularly in low-resource settings. As co-founder of the Global Power of Oncology Nursing initiative, she actively supports nurses delivering cancer care under challenging circumstances and promotes global collaboration in oncology nursing.



Dr. Darcy Burbage is an Oncology Clinical Nurse Specialist with over 30 years of experience in clinical practice, education, research, and program development. She is recognized nationally and internationally for her leadership in advancing survivorship care, oncology nurse navigation, and evidence-based practice. Darcy is passionate about translating evidence into practice and strengthening cancer care delivery. She has served in leadership roles across numerous professional and patient advocacy organizations. A recipient of the prestigious Oncology Nursing Society Pearl Moore "Making a Difference" Award, Dr. Burbage is consistently recognized for her contributions to oncology nursing. Her research interests include symptom management, palliative care, and the survivorship experience of individuals living with metastatic cancer and is dedicated to improving quality of life for individuals living with cancer and in mentoring the next generation of oncology nurses.



ACKNOWLEDGMENT

The congress of the Oncology Nursing Association was successfully held with the valuable support of our sponsors, collaborators, and all contributing institutions. We sincerely thank each of them for their contributions, which made this important gathering in oncology nursing possible.

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SCIENTIFIC PROGRAM



07 MAY THURSDAY - PRE-CONGRESS COURSES

TIME	COURSE NAME	ATTENDANCE
09:00 - 17:00	Evidence-Based Practices in Pediatric Oncology Nursing Coordinator: Pınar YILMAZ	Min:10 Max:50
08:30 - 17:00	Basic Cancer Education Course in Oncology Nursing Coordinator: Ayşin KAYIŞ	Min:20 Max:50
09:00 - 17:00	Complementary and Integrative Health Practices in Cancer Coordinators: Gülbeyaz CAN, Dilek YILDIRIM	Min:10 Max:25
09:00 - 17:00	Immunotherapy Course Coordinators: Gülbeyaz CAN, Dilek YILDIRIM	Min:10 Max:50
09:00 - 18:00	Understanding the Breast Cancer Journey: Holistic Care and Long-Term Strategies to Enhance Survivorship Coordinators: Sevil GÜLER, Arzu TUNA	Min:10 Max:30
09:00 - 17:00	Interactive Skills Training in Radiation Oncology Nursing Coordinators: Gülbeyaz CAN, Vildan KOCATEPE, Yeter SOYLU	Min:10 Max:30
09:00 - 16:30	Fundamentals of Hematopoietic Stem Cell Transplantation Nursing Coordinator: Yasemin KARACAN	Min:20 Max:100



08 MAY 2026 - FRIDAY - SCIENTIFIC PROGRAM

TIME	HALL A PROGRAM	
08:30–09:00	REGISTRATION	
09:00–09:30	OPENING CEREMONY Perihan GÜNER – Oncology Nursing Association President Zeynep ŞİMŞEK – Dean, Faculty of Health Sciences, Istanbul Bilgi University M. Ege YAZGAN – Rector, Istanbul Bilgi University	
09:30–10:00	Fashion Show: Healing Hands: Nurses Empowered by Science	
LECTURE 1A: LEADERSHIP, EMPOWERMENT, AND PROFESSIONAL IDENTITY Session Chairs: Sultan KAV, Sevinç KUTLUTÜRKAN		
09:30–10:30	Leadership, Empowerment, and Professional Identity in Oncology Nursing	Annie YOUNG
10:30–11:00	COFFEE BREAK	
PANEL 1A: THE IMPACT OF SCIENTIFIC AND TECHNOLOGICAL INNOVATIONS ON ONCOLOGY NURSING Session Chairs: Ayfer KARADAKOVAN, Nimet OVAYOLU, Kamile KIRCA		
11:00–11:20	Integrating Nursing Research into the Delivery of Innovative Cancer Care	Cherith SEMPLE
11:20–11:40	Digital Transformation, Innovative Technologies, and Clinical Decision Support Systems: iINTERVENE Porject	Nikolina DODLEK
11:40–12:00	Maintaining Compassionate Care in teh Face of Rapid Technological Advancement: Striking a Balance in Oncology Nursing	Ayşe Gül PARLAK
SATELLITE SYMPOSIUM 1A: EVIDENCE-BASED APPROACHES TO SYMPTOM MANAGEMENT Session Chairs: Fatma GÜNDOĞDU, Derya SUBAŞI SEZGİN		
12:00–12:15	Management of Radiodermatitis in Breast Cancer–Related Radiotherapy	Ayşe KORKMAZ
12:15–12:30	Management of Mucositis in Hematopoietic Stem Cell Transplantation Patients	Gülcan ÇELİK
12:30–13:30	LUNCH	
LECTURE 2A: GLOBAL COLLABORATIONS IN ONCOLOGY NURSING Session Chairs: Özlem OVAYOLU, Remziye SEMERCI		
13:30–13:45	Global Collaborations in Oncology Nursing	Darcy BURBAGE
13:45–14:00	Leadership and Health Policy in Oncology Nursing	Julia DOWNING
PANEL 2A: INTEGRATION OF PSYCHOSOCIAL CARE INTO CLINICAL PRACTICE Session Chairs: Perihan GÜNER, Ayşe OKANLI, Zeynep KARAKUŞ		
14:00–14:20	Hope and Hopelessness from the Patient Perspective	Behice Belkis ÇALIŞKAN
14:20–14:40	From Adversity to Strngth: Psychological Resilience Mechanisms in Cancer Patients	Y. Sinem ÜZAR ÖZÇETİN
14:40–15:00	Psychosexual Care in Oncology Patients	Lorraine GROVER
15:00–15:30	COFFEE BREAK	
PANEL 3A: ADVOCACY IN ONCOLOGY NURSING Session Chair: Öznur USTA YEŞİL BALKAN, Miray AKSU		
15:30–15:55	Tele-Oncology Nursing: The Future of Remote Monitoring and Digital Patient Education	Pinar BEDİR
15:55–16:15	The Transformation of the Advocacy Mission in Oncology Nursing	İlknur YAZICIOĞLU
PANEL 4A: PROFICIENCY TRAINING IN ONCOLOGY NURSING: THE NURSE-PAITENT- CLINICAL CARE TRIAD Session Chairs: Münewver ERKUL, Sevgül ÖZDEMİR		
15:30–15:55	Proficiency Training and Professional Positioning in Oncology Nursing	Özlem TOPKAYA
15:55–16:15	Patient Centere Education in Oncology Nursing: Nurse and Patient Perspectives–Current Status	Esra TAYAZ



08 MAY 2026 - FRIDAY - SCIENTIFIC PROGRAM

TIME	HALL B PROGRAM	
PANEL 1B: PLAY, TECHNOLOGY, AND TOUCH: NON-PHARMACOLOGICAL APPROACHES IN PEDIATRIC ONCOLOGY Session Chairs: Pinar TAŞPINAR, Pinar YILMAZ		
11:00–11:30	Coping Through Play: Therapeutic Play and Communication in Pediatric Oncology	Tuba ARPACI
11:30–12:00	Symptom Management in Pediatric Oncology Using Digital Technologies	Aslı AKDENİZ KUDUBEŞ
PANEL 2B: GYNECOLOGIC ONCOLOGY NURSING COMMISSION Session Chairs: Gülten GÜVENÇ, Gönül KURT		
12:00–12:15	Prevention, Screening, and Early Detection in Gynecologic Oncology Nursing: Current Status and Future Perspectives	Ayşe KILIÇ UÇAR
12:15–12:30	Roles of the Nurse Navigator in Gynecologic Oncology	Filiz ÜNAL TOPRAK
12:30–13:30	LUNCH	
PANEL 3B: STEM CELL TRANSPLANTATION NURSING Session Chairs: Yasemin KARACAN, Dilek URTEKİN		
13:30–13:45	Current Treatments and Clinical Research	Gül Hatice TARAKÇIOĞLU
13:45–14:00	Clinical Models and Good Clinical Practice (GCP)	Tuğba MENEKLİ
PANEL 4B: PATIENT-REPORTED OUTCOMES IN RADIOTHERAPY Session Chairs: Ükke KARABACAK, Vildan KOCATEPE		
14:00–14:15	Integration of Patient-Reported Outcomes into Clinical Decision-Making	Berkay ALİKAN
14:15–14:30	The Impact of Patient-Reported Outcomes on Symptom Management and Quality of Care	Ülkü SAYGILI DÜZOVA
PANEL 5B: WHAT WE KNOW AND WHAT WE DON'T KNOW: HIDDEN RISKS & NURSE SAFETY IN THE CHEMOTHERAPY Session Chairs: Dilek YILDIRIM, Zeliha GENÇ		
14:30–14:45	What Do Safety Standards Tell Us?	Funda ÇAM
14:45–15:00	Are Standards Enough? Silent Risks in Chemotherapy	Zeyno BAYRAM
15:00–15:30	COFFEE BREAK	
PANEL 6B: NURSING CARE IN BREAST CANCER: PRESENT AND FUTURE Session Chairs: Özgül KARAYURT, Ayla GÜRSOY		
15:30–15:45	Evidence-Based Approaches to Improving QoL During Survivorship	Çisem BAŞTARCAN
15:45–16:00	Current Approaches to Autologous Breast Reconstruction and Nursing Care	Başak ARI
WORKSHOP 1B		
16:00–17:00	Emotional Freedom Techniques (EFTs)	Esin AKIN



09 MAY 2026 - SATURDAY - SCIENTIFIC PROGRAM

TIME	HALL A PROGRAM	
PANEL 5A: INTERACTIVE INTERDISCIPLINARY HOLISTIC APPROACH TO PATIENT CARE Session Chairs: Gülbeyaz CAN, Vildan KOCATEPE, Ferhan Çetin ŞEREF, Ünal ÖNSÜZ		
09:00-10:30	Physician	Meltem DAĞDELEN
	Oncology Nurse	Zeyno BAYRAM
	Dietitian	Dilşat BAŞ
	Consultation-Liasion Psychiatry (CLP) Nurse	Nesibe KALYONCU
	Academic Nurse	Funda ÇAM
10:30-11:00	COFFEE BREAK	
PANEL 6A: MESSAGE FROM CANCER PATIENT ASSOCIATIONS Session Chairs: Perihan GÜNER, Ayşin KAYIŞ, Kadriye SANCI		
11:00-11:12	Onko-day	Güzin ARBAŞ
11:12-11:24	Europadonna	Violet AROYA
11:24-11:36	Genç Birikim Association	Salih YÜCE
11:36-11:48	Kanserle Dans Association	Esra ÇOKÇETİN
11:48-12:00	Pembe İzler Association	Seral ÇELİK
12:30-13:00	LUNCH	
PANEL 7A: SUCCESS STORIES Session Chairs: Zeynep ŞİMŞEK, Figen BAY, Hale SÜNBÜL		
13:00-13:20	Song, Play, Hope: The Transformed Child Experience Through Therapeutic Play in Pediatric Stem Cell Transplantation Following One Touch	Öznur BALKAN
13:20-13:40	Development of Evidence-Based and Innovative Practices to Enhance Patient & Staff Safety in Oncology Nursing: A Clinical Transformation Story	İncihan TUNA
113:40-14:00	From TÜBİTAK Research Journey to Social Awareness: Breast Cancer in Men and Digital Information Platform	Ceren GÜRLEYEN
PANEL 8A: VOICES OF FUTURE ONCOLOGY NURSES Session Chairs: Sebahat ATEŞ, Ebru TEMİZSOY, Hilal ÖZENÇ		
14:00-14:20	How Do I Perceive Oncology Nursing? Expectations and Concerns	Rüveyda BERK
14:20-14:40	Why Did I Choose Oncology Nursing?	Emine İlayda KARTAL
14:40-15:00	Is a Long-Term Career in Oncology Nursing Possible?	Hülya DALKILIÇ BİNGÖL
15:00-15:30	COFFEE BREAK	
PANEL 9A: THE FUTURE OF ONCOLOGY: FROM ENVIRONMENTAL SUSTAINABILITY TO LONGEVITY STRATEGIES Session Chair: Besti ÜSTÜN, Şerife KARACA		
15:30-16:00	The Role of Green Oncology in Sustainable Healthcare	Emine GÖK
16:00-16:30	Longevity Strategies for Cancer Prevention	Arzu TUNA
16:30-17:30	AWARD CEREMONY AND CLOSING SESSION	



09 MAY 2026 - SATURDAY - SCIENTIFIC PROGRAM

TIME	HALL B PROGRAM	
PANEL 7B: FRAILITY IN GERIATRIC HEMATOLOGY/ONCOLOGY NURSING Session Chairs: Yasemin YILDIRIM, Elif SÖZERİ ÖZTÜRK		
09:00-09:15	The Concept of Frailty, Its Clinical Importance, and Geriatric Assessment	Gökhan ZENGİN
09:15-09:30	Integration of Research Findings on Frailty into Clinical Practice	Zühal DEMİRCİ
PANEL 8B: A HOLISTIC APPROACH TO PALLIATIVE CARE Session Chairs: Özlem UĞUR, Hanife ÖZÇELİK		
09:00-09:15	Compassionate Touch; Spirituality in Palliative Care	Gökhan ZENGİN
09:15-09:30	Evidence-Based Practices in Palliative Care	Zühal DEMİRCİ
10:30-11:00	COFFEE BREAK	
WORKSHOP 2B		
11:00-12:00	Crafting Article Titles That Capture the Reader's Attention	Ayla GÜRSOY
12:30-13:00	LUNCH	
PANEL 9B: EARLY DETECTION AND SCREENING IN CANCER CARE AND CONTROL AMONG DISADVANTAGED GROUPS: THE EMPOWERING ROLE OF NURSING Session Chairs: Nurhan DOĞAN AYDIN, Canan PÖRÜCÜ		
13:00-13:15	Access to Cancer Screening Programs: Barriers, Inequalities, and Nursing Approaches	Elif ACAR
13:15-13:30	Innovative Nursing Practices and Best Practices in Strengthening Early Diagnosis	Aysun AKÇAKAYA CAN
WORKSHOP 3B		
13:30-15:00	Leadership in Symptom Management for Oncology Patients	Aysel TEKELİ
15:00-15:30	COFFEE BREAK	
WORKSHOP 4B		
15:00-17:00	Management of the Grieving Process	Elif Hilal TOPRAK



ORAL PRESENTATIONS



OP - 001

To Parents with Family-Centered Care in Pediatric Units Relationship Between the Level of Support Provided

Hilal Karakuş

Istanbul Nişantaşı University, Vocational School of Health Services, Istanbul, Türkiye

Objective: The aim of Family-Centered Care is to cooperate with the family, obtain information about the child and the family, minimize anxiety experienced during illness and hospitalization, maximize the child's mental, physical, and psychological potential, and reduce the length of hospital stay. For families to be actively involved in their child's care, they need to be familiar with the hospital environment and establish effective communication with nurses. Introducing the clinic to the child and family upon admission, providing information about clinical routines and healthcare staff, and sharing accurate and impartial information about the child throughout the treatment process are essential nursing practices related to Family-Centered Care. Supporting parents of hospitalized children is an important aspect of nursing care. Nurse-parent support includes providing continuous information through effective communication and reducing parental stress by involving parents in care. Supportive nursing behaviors include empathy, information sharing, encouragement of participation, confidence building, validation, respect, and problem-solving. This study aimed to determine the relationship between Family-Centered Care in pediatric units and the level of support perceived by parents.

Materials-Methods: This descriptive study included 155 parents (124 mothers and 31 fathers) whose children were hospitalized for at least three days in the pediatric units of a private foundation university hospital in Istanbul and who voluntarily participated. No sample selection was performed. Data were collected using the Introductory Information Form, the Family-Centered Care Scale, and the Nurse-Parent Support Scale. Descriptive and comparative statistical analyses were conducted.

Results: Of the participating parents, 80% were female, 54.2% were aged 31-40 years, and 35.5% were university graduates. The mean Family-Centered Care Matching Percentage score was 70.1 ± 38.9 , and the mean total Nurse-Parent Support Scale score was 84.8 ± 15.2 . A statistically significant relationship was found between the Family-Centered Care Scale and the Nurse-Parent Support Scale and its subdimensions, except for the matching percentage-significance subdimension ($p < 0.05$). Higher family-centered care consistency and nurse-parent support scores were observed among female, non-working, and primary school graduate parents, as well as among parents whose children were aged 6-12 years, hospitalized in the Pediatric Bone Marrow Transplantation Unit, and had a previous hospitalization history ($p < 0.05$).

Conclusion(s): A positive relationship was found between Family-Centered Care during hospitalization and the level of support perceived by parents. Strengthening Family-Centered Care approaches in pediatric clinics may increase parental support and improve the quality of pediatric nursing care.

Keywords: Family centered care, support, parent, nurse



OP - 002

Nurse-Led Visual-Aided Flower Imagery Intervention for Breast Cancer Patients: Case Presentation

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Objective: The diagnosis and treatment process of breast cancer can lead to significant psychological stress, anxiety, and emotional distress. Uncertainty related to the diagnosis, treatment-related side effects, and concerns about disease recurrence may increase levels of depression, anxiety, and stress. In this context, nurse-led holistic and creative care approaches play a crucial role in supporting patients' cognitive and emotional coping processes. Visual-aided flower imagery is an innovative nursing intervention that facilitates emotional expression through symbolic meanings and supports the reframing of illness experiences. This case presentation aims to examine changes in cognitive and emotional coping processes, as well as depression, anxiety, and stress levels, following a nurse-led visual-aided flower imagery intervention in breast cancer patients.

Case Report: The study was conducted with two breast cancer patients receiving hormone therapy. The interviews were carried out online in a single session, and the visual-aided flower imagery intervention lasted approximately 25–30 minutes. Prior to the intervention, patients' cognitive and emotional coping levels were assessed using the Cognitive Emotion Regulation Questionnaire–Cancer version, and their psychological status was evaluated with the Depression Anxiety Stress Scale. The flower visuals used in the imagery practice were created by the researcher using AI-supported image generation tools in accordance with the study objectives. The imagery process was structured to promote symbolic meaning-making and emotional reflection through visual stimuli. During the intervention, patients were presented with various flower images and asked to select the flower they felt best represented them. Semi-structured questions were used to explore the meaning attributed to the selected flower in relation to the illness experience, perceived similarities with the self, and the emotions evoked. Throughout the session, the nurse facilitated the imagery practice using a non-directive, supportive, and reflective approach. Following the intervention, the CERQ-Cancer was re-administered, and the DASS was reassessed one week later. Patients' experiences related to the intervention were collected through qualitative interviews, and the data were analyzed using thematic analysis.

Conclusion(s): The visual-aided flower imagery practice was found to facilitate emotional expression, enhance cognitive awareness of the illness experience, and support cognitive–emotional coping processes. Positive trends were observed in depression, anxiety, and stress levels following the intervention. Qualitative analysis revealed that the flower imagery practice contributed to reframing the illness experience and strengthened patients' awareness of their coping processes. Overall, the findings suggest that nurse-led, imagery-based creative interventions may serve as a supportive approach that can be integrated into oncology nursing care.

Keywords: Breast cancer, imagery, nursing care



OP - 003

The Effect of Animation-Based Educational Intervention on Breast Cancer Awareness, Early Detection, and Screening Behaviors

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Objective: Breast cancer is the most common cancer among women worldwide, including in Türkiye, affecting one out of every eight to nine women. Adopting preventive attitudes and behaviors is important for reducing the risk of developing cancer. However, the literature reports that women have low awareness of breast cancer and do not regularly practice early diagnosis and screening behaviors. Nowadays, digital and visual education materials stand out as a remarkable and facilitating method in health education. The aim of this study was to examine the effect of animation-based education on women's breast cancer awareness, early diagnosis, and screening behaviors.

Materials-Methods: The study was planned in a pretest-posttest one-group quasi-experimental design. The study was conducted in Karaköy Family Health Center and KETEM in Bartın province between April 2025 and January 2026. The sample of the study consisted of 62 women who agreed to participate in the study and met the inclusion criteria. Participant information form, Breast Cancer Health Belief Model Scale, and Breast Cancer Screening Belief Scale were used to collect the data. After the pre-tests were administered to the participants, animation-supported training on breast cancer was given. The animation link was shared with the participants to support the permanence of the training. Eight weeks after the training, the participants were contacted by phone, and post-tests were administered. This study was supported by the TÜBİTAK 2209-A University Students Research Projects Support Program (Project no: 1919 B012471234).

Results: The mean age of participants was 32.3±11.2 years. When health habits were evaluated, most did not smoke (72.6%) or consume alcohol (93.5%); 82.3% did not exercise regularly, and 43.5% lacked regular eating habits. The rate of monthly breast self-examination increased from 19.4% before training to 46.8% after training, with a statistically significant difference ($p=0.02$). Significant differences were found between pre- and post-test scores across all sub-dimensions of the Breast Cancer Screening Belief Scale and Health Belief Model Scale ($p<0.05$).

Conclusion(s): The results of the study revealed that animation-based education is an effective method to improve women's breast cancer awareness, attitudes, and screening behaviors. It is thought that this animation-based education created with digital and visual content attracted women's attention and facilitated learning. Therefore, it is recommended that animation-based training should be disseminated in health trainings to increase breast cancer awareness and screening behaviors.

Keywords: Awareness, breast cancer, early diagnosis, health education, screening



OP - 004

Breast Cancer Awareness and Its Determinants Among Women in Türkiye: A Cross-Sectional Study

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Objective: This study aimed to determine the level of breast cancer awareness and its sociodemographic determinants among women aged 18 years and older living in a province of Türkiye.

Materials-Methods: This cross-sectional descriptive study was conducted between October and November 2025 with 715 women. Data were collected using the Descriptive Characteristics Form and the Breast Cancer Awareness Scale (BCAS). Descriptive statistics, t-tests, ANOVA, correlation, and multiple linear regression analyses were performed.

Results: The mean age of participants was 32.37±12.58 years. The mean total BCAS score was 79.08±8.65, indicating a moderate-to-high awareness level. Although knowledge of risk factors and symptoms was high, health behavior scores remained moderate. Regression analysis revealed that age ($\beta=0.147$, $p=0.027$) and education level ($\beta=0.111$, $p=0.024$) were significant predictors of awareness. Unexpectedly, receiving breast self-examination training ($\beta=-0.162$, $p<0.001$) and more frequent clinical breast examination ($\beta=-0.107$, $p=0.010$) were negatively associated with awareness. The model explained 7.5% of the variance.

Conclusion(s): Although breast cancer awareness was moderate-to-high, knowledge and attitudes were not fully translated into preventive behaviors. Oncology nursing interventions should therefore focus not only on information delivery but also on behavior change strategies, anxiety management, and culturally tailored approaches.

Keywords: Breast cancer, awareness, screening behavior, early detection, oncology nursing

OP - 005

The Effect of Foot Reflexology on Nausea and Vomiting in Cancer Patients: A Systematic Review

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Objective: Nausea and vomiting are among the most common and distressing symptoms experienced by individuals diagnosed with cancer. These symptoms not only negatively affect quality of life but can also lead to serious health problems such as dehydration, malnutrition, electrolyte imbalances, and decreased adherence to treatment. Despite the availability of pharmacological treatments, symptom control remains inadequate in some patients, which has increased interest in complementary and alternative approaches. In this context, foot reflexology has emerged as a promising complementary intervention for alleviating nausea and vomiting; however, systematic reviews that comprehensively evaluate its effects on these symptoms in cancer patients are limited. Therefore, this systematic review aims to evaluate the effect of foot reflexology on nausea and vomiting symptoms in adult cancer patients.

Materials-Methods: This systematic review was conducted in accordance with the PRISMA 2020 guidelines. A comprehensive literature search was performed in PubMed, Web of Science, Scopus, and the Cochrane Library from database inception to February 2026. Study eligibility was assessed according to the PICOS criteria. Study selection and data extraction were independently performed by two researchers, and disagreements were resolved by consultation with a third reviewer. The methodological quality of the included studies was assessed using the Cochrane Risk of Bias 2 (RoB 2) tool. The study protocol was registered in the International Prospective Register of Systematic Reviews (PROSPERO) (CRD420251117218).

Results: A total of 10 studies involving 604 participants were included in the systematic review. Five studies were randomized controlled trials and five were quasi-experimental in design. Sample sizes ranged from 40 to 82 participants. The majority of participants were adult cancer patients receiving chemotherapy, with breast, lung, gastrointestinal, and gynecological cancers being the most frequently studied types. Intervention sessions lasted between 20 and 45 minutes and were administered in 3 to 12 sessions. Reflexology protocols primarily targeted reflex points associated with the digestive and autonomic nervous systems. Most studies reported statistically significant reductions in the frequency, severity, and duration of nausea and vomiting in the intervention groups compared with control groups. Overall, the methodological quality of the studies was rated as moderate to high.

Conclusion(s): Foot reflexology appears to be an effective and safe complementary intervention for reducing nausea and vomiting in cancer patients. Due to its non-invasive and low-cost nature, it may be integrated into supportive oncology care. Further large-scale, multicenter randomized controlled trials are needed to strengthen the level of evidence.

Keywords: Cancer, complementary therapy, foot reflexology, nausea, vomiting



OP - 006

Evaluation of Hope And Spiritual Well-Being in Canser Patiens: a Mixed - Methods Study

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Objective: Cancer is not only a disease that affects the body but also a multidimensional health problem that leaves deep marks on an individual's psychological and psychosocial world, often associated with feelings of helplessness, uncertainty, and fear of death. This study aimed to evaluate the levels of hope and spiritual well-being in patients with cancer.

Materials-Methods: This study, using a sequential explanatory mixed-methods design, was conducted with 157 cancer patients receiving treatment in a chemotherapy unit. Quantitative data were collected using a Personal Information Form, the Spiritual Well-Being Scale (SWBS), and the Herth Hope Index (HHI), while qualitative data were obtained through semi-structured interviews with voluntary participants representing high, medium, and low levels according to quantitative scores. Quantitative data were analyzed using SPSS 24.0 with frequency, percentage, mean, and standard deviation. Qualitative data were analyzed using Colaizzi's seven-step thematic analysis method (1978) after reaching data saturation, following the COREQ criteria.

Results: The total score of spiritual well-being in cancer patients (118.33 ± 16.34) and the total score of continuous hope (48.48 ± 9.82) were found to be at a moderate level. A positive, moderate, and statistically significant relationship was observed between the total scores of spiritual well-being and continuous hope ($r = 0.465$; $p < 0.001$). Spiritual well-being explained 21.7% of the variance in continuous hope. Spiritual well-being was higher in women and those with good economic status, whereas continuous hope was higher only in participants with good economic status. Additionally, qualitative interviews revealed two main themes—"Reconstructing Spirituality as a Way of Understanding and Coping with the Illness Process" and "Psychological Well-Being and the Effects of Spiritual Needs on the Meaning of Life"—and seven sub-themes: divine meaning and surrender, spiritual strengthening and coping, spiritual fluctuation and crisis experience, limited or neutral effect of spirituality, spiritual relaxation and inner peace, hope and clinging to life, and strengthening through family and social relationships.

Conclusion(s): As a result of the study, cancer patients were found to have moderate levels of hope and spiritual well-being, and the qualitative findings revealed that spiritual processes play a decisive role in these levels

Keywords: Cancer; mixed methods, hope, spiritual well-being



OP - 007

Empowering the Caregiving Experience: A Positive Psychotherapy-Based Psychoeducational Intervention for Caregivers of Patients With Colorectal Cancer

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Objective: The cancer process is a challenging experience that can negatively affect the psychosocial balance and self-efficacy perceptions of caregivers as well as patients. This study aimed to examine the effects of a Positive Psychotherapy-based Balance Model psychoeducational intervention on balanced living, psychological well-being, and self-efficacy among caregivers of patients diagnosed with colorectal cancer.

Materials-Methods: This randomized controlled trial with repeated measures (pretest, posttest, and 3-month follow-up) included 38 caregivers of patients with colorectal cancer. Nineteen caregivers in the intervention group received a five-session structured psychoeducational program based on the Positive Psychotherapy Balance Model, while 19 caregivers in the control group received a single-session informational education. Data were collected at baseline, immediately post-intervention, and at the 3-month follow-up using the Balanced Living Scale, Psychological Well-Being Scale, and General Self-Efficacy Scale. Statistical analyses included chi-square and Fisher's exact tests, independent samples t-test, Mann-Whitney U test, repeated-measures analysis of variance (ANOVA), and the Friedman test.

Results: The psychoeducational intervention significantly improved the levels of balanced living, psychological well-being, and general self-efficacy among caregivers in the intervention group compared to baseline measurements. However, these improvements were not fully sustained at the follow-up assessment, indicating a partial decline over time.

Conclusion(s): The findings demonstrate that a structured psychoeducation program based on the Positive Psychotherapy Balance Model is an effective psychiatric nursing intervention for enhancing balanced living, psychological well-being, and general self-efficacy levels among oncology caregivers. To ensure the sustainability of these gains, it is recommended to incorporate booster sessions into the program, plan follow-up-based interviews, or develop practices that support long-term maintenance.

Keywords: Cancer caregivers, colorectal cancer, self-efficacy, psychological well-being, positive psychotherapy

OP - 008

Can Machine Learning Predict Psychological Distress? A Prediction Model Based on the Distress Thermometer in Cancer Patients Receiving Radiotherapy

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Objective: The diagnosis and treatment of cancer can lead to high levels of psychological distress in patients. Early identification of distress is critical for planning appropriate psychosocial interventions. Machine learning methods have emerged as effective tools for predicting health outcomes using clinical data. This study aimed to predict psychological distress levels based on Distress Thermometer scores using machine learning algorithms and to compare the performance of different models in cancer patients receiving radiotherapy.

Materials-Methods: The study was conducted on 200 cancer patients undergoing radiotherapy. Clinical and demographic data were preprocessed, missing data were checked, and necessary coding procedures were completed. Distress Thermometer scores were defined as the target variable, while clinical and demographic variables were used as input features. The dataset was split into training and test subsets for model development and evaluation, and cross-validation was applied to improve generalizability. Nine different machine learning algorithms (Logistic Regression, Random Forest, Support Vector Machine, Decision Tree, AdaBoost, K-Nearest Neighbors, Gradient Boosting Machine, LightGBM, and XGBoost) were applied, and model performance was compared using accuracy, precision, recall, specificity, and F1-score.

Results: Boosting-based models (XGBoost, LGBM, GBM) demonstrated the highest predictive performance compared to other algorithms. The XGBoost model achieved the highest values across all performance metrics (Accuracy = 0.9123, Precision = 0.9050, Recall = 0.9148, F1-score = 0.9099) and effectively distinguished between distress classes. Random Forest and SVM models also showed reliable performance but did not reach the same level of accuracy and generalizability as the boosting methods.

Conclusion(s): These findings indicate that machine learning-based approaches can serve as effective and reliable tools for predicting psychological distress levels in cancer patients receiving radiotherapy. The high accuracy and generalization performance of boosting-based models highlight their potential for developing clinical decision support systems. Integrating these data-driven predictive models into clinical practice may assist oncology nurses in identifying patients at psychosocial risk early and in planning appropriate psychosocial care and counseling interventions. This integration can facilitate individualized nursing care, enhance opportunities for early intervention, and support the psychosocial well-being of cancer patients. Moreover, models developed with larger and more balanced datasets in the future have the potential to serve as decision-support tools in nursing practice.

Keywords: Cancer patients, machine learning, prediction modeling, psychological distress

OP - 009

Monitoring Nutritional Status During Radiotherapy in Patients with Head and Neck Cancer

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Objective: Head and neck cancers are associated with a high risk of malnutrition due to effects on swallowing and respiratory functions. Treatments such as surgery, radiotherapy, and chemotherapy may reduce oral intake, increasing malnutrition risk and negatively affecting nutritional status and quality of life. This study aims to monitor nutritional status patients with head and neck cancer during radiotherapy and evaluate relationship with clinical findings, quality of life, and treatment-related side effects.

Materials-Methods: The study was conducted at the Radiation Oncology Clinic of Marmara University Pendik Training and Research Hospital between July 2025 and March 2026. Body composition measurements were obtained using Bioelectrical Impedance Analysis (BIA). Malnutrition risk was assessed with the Patient-Generated Subjective Global Assessment (PG-SGA) and NutriScore; quality of life with the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ); and treatment-related side effects with the Common Terminology Criteria for Adverse Events (CTCAE). Measurements were performed during the 6-week radiotherapy period, and data were analyzed using SPSS 28.0 with a significance level of $p < 0.05$.

Results: A total of 14 patients were included in the study (age: 63.4 ± 12.1 years; 21.4% female, 78.6% male). All patients received radiotherapy, and 57.1% were treated with concurrent chemotherapy. After six weeks, a statistically significant decrease was observed in body weight and BMI (Body Mass Index) ($p < 0.001$ for both), while PG-SGA total scores significantly increased ($p = 0.002$). NutriScore scores increased but were not statistically significant ($p = 0.054$). EORTC QLQ-C30 global health status scores significantly decreased ($p = 0.018$). According to CTCAE evaluation, the severity of dysphagia, taste alterations, and fatigue significantly increased ($p < 0.05$), whereas no significant changes were observed in other toxicities. In anthropometric and body composition analyses, waist circumference and mid-upper arm circumference remained unchanged, while hip circumference significantly decreased ($p = 0.012$). Fat mass decreased without statistical significance, whereas fat-free mass ($p = 0.002$) and total body water ($p = 0.002$) showed significant reductions.

Conclusion(s): During the six-week follow-up period, deterioration in nutritional status, a decrease in quality of life, and an increase in some treatment-related toxicities were observed in patients receiving radiotherapy. These findings highlight the importance of regularly assessing the nutritional status of patients during the radiotherapy process and implementing early nutritional interventions.

Keywords: Head and neck cancer, nutritional status, radiotherapy, side effects, quality of life



Table 1. Changes in baseline and week 6 parameters (n = 14)

Variable	Baseline (mean ± SD)	Week 6 (mean ± SD)	p value
Body weight (kg)	74.24 ± 15.48	70.94 ± 15.38	<0.001
BMI (kg/m ²)	26.52 ± 4.32	25.29 ± 4.11	<0.001
NutriScore	4.14 ± 1.46	5.00 ± 1.52	0.054
EORTC QLQ-C30 Global health	78.54 ± 21.13	57.11 ± 22.62	0.018
Hip circumference (cm)	102.29 ± 10.20	100.21 ± 9.13	0.012
Mid-upper arm circumference (cm)	28.21 ± 1.81	28.36 ± 2.41	0.804
Fat mass (kg)	20.46 ± 10.54	19.82 ± 9.98	0.306
Total body water (kg)	37.40 ± 6.63	35.53 ± 6.72	0.002

Data are presented as mean ± standard deviation. p < 0.05 was considered statistically significant. Abbreviations: Mean: average; SD: standard deviation; kg: kilogram; m²: square meter; EORTC QLQ-C30: European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire; cm: centimeter.

The effect of nursing interventions based on the Levine Conservation Model on fatigue, peripheral neuropathy, and anxiety levels in patients with colorectal cancer receiving chemotherapy: a randomized controlled trial

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Objective: This study was conducted as a pre-test-post-test randomised controlled trial to examine the effect of nursing interventions based on the Levine Protection Model on cancer-related fatigue, peripheral neuropathy, and anxiety levels in colorectal cancer patients receiving chemotherapy.

Materials-Methods: The study sample consisted of a total of 68 patients with colorectal cancer who were receiving treatment at the Medical Oncology Clinic of a university hospital and met the inclusion criteria. Participants were randomly assigned in a 1:1 ratio to either the intervention group (n = 34) or the control group (n = 34). The intervention group received nursing interventions structured according to the Levine Conservation Model, including symptom management education, progressive muscle relaxation exercises, and sensory ball application, whereas the control group received routine nursing care. The data was collected between June and December 2025 through pre-test, 14. days and 28. days measurements. Statistical analyses were conducted using a statistical software package (SPSS version 27). Descriptive statistics were presented as numbers, percentages, means, and standard deviations. Independent samples t-tests and chi-square tests were used for between-group comparisons, while repeated-measures analysis of variance (ANOVA) with appropriate post-hoc tests was employed to evaluate within-group changes over time. A p-value of less than 0.05 was considered statistically significant.

Results: There was no statistically significant difference between the intervention and control groups in terms of participants' sociodemographic and disease-related characteristics, and the groups were determined to be homogeneous. No statistically significant differences were found between the groups in terms of cancer-related fatigue, chemotherapy-related peripheral neuropathy, and anxiety levels in the pre-intervention measurements ($p>0.05$). In the measurements taken on days 14 and 28, fatigue levels decreased significantly over time in the intervention group, while they increased in the control group. Regarding neuropathy, particularly in terms of sensory symptoms, a marked improvement was observed in the intervention group from day 14 onwards, while symptom severity increased in the control group ($p<0.05$). When anxiety levels were examined, a significant decrease was observed in the intervention group at both the 14th and 28th day measurements, while anxiety levels in the control group remained unchanged or increased ($p<0.05$).

Conclusion(s): Nursing interventions based on the Levine Protection Model have been found to be effective in reducing fatigue, peripheral neuropathy, and anxiety in colorectal cancer patients receiving chemotherapy. In light of these results, it is thought that model-based, non-pharmacological nursing interventions offer an applicable, sustainable, and patient-centred approach in oncology care.

Keywords: Anxiety, colorectal cancer, fatigue, levine conservation model, peripheral neuropathy

OP - 011

The Impact of Switching from Povidone-Iodine to Chlorhexidine Gluconate on Port Catheter-Related Infections in Pediatric Hematology-Oncology Patients

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Objective: Implanted port catheters are widely used in pediatric hematology and oncology patients to provide long-term vascular access. However, catheter-related bloodstream infections (CLABSI) remain among the most serious complications, leading to significant morbidity and mortality. Although chlorhexidine-based antiseptics are recommended for catheter care, there are insufficient studies in the national and international literature comparing the effectiveness of chlorhexidine-alcohol and povidone-iodine solutions in pediatric patients with port catheters. The aim of this study is to compare the effects of 2% chlorhexidine gluconate/70% isopropyl alcohol (CHG) and 10% povidone-iodine antiseptics used in port catheter care on the development of catheter-related bloodstream infections (CLABSI) in pediatric hematology and oncology patients.

Materials-Methods: This single-center retrospective study was conducted in pediatric patients aged 1-18 years with an implanted port catheter who were followed with a diagnosis of malignancy at the Pediatric Hematology-Oncology Clinic of Göztepe Prof. Dr. Süleyman Yalçın City Hospital. The clinical port catheter care protocol was updated in November 2024; prior to this date, povidone-iodine was used as the antiseptic agent, whereas after the update, antiseptics containing 2% chlorhexidine gluconate/70% isopropyl alcohol were used. Demographic data, diagnoses, port catheter duration of use, development of catheter-related bloodstream infection (CLABSI), number of isolated pathogens, and CLABSI incidence calculated according to the total number of patients with port catheters were obtained from the hospital information management system and the records of the infection control committee for patients followed between November 2023 and November 2025. The two periods were analyzed using comparative statistical methods. The study was conducted after obtaining approval from the institutional ethics committee.

Results: A total of 111 patients were included in the study; 58.5% were male and 41.5% were female. Leukemia accounted for 55.0% of the cases, while 45.0% had solid tumors. The infection incidence calculated according to the number of pathogen isolations was 64.9% during the povidone-iodine period and decreased to 45.0% during the CHG period. A 19.9% reduction in infection incidence was observed during the period when CHG was used. Additionally, contamination events, which were evaluated as indicators of contamination, decreased by 28%.

Conclusion(s): This study showed that replacing povidone-iodine with 2% chlorhexidine gluconate/70% isopropyl alcohol in port catheter care significantly reduced infection and contamination rates in pediatric hematology-oncology patients. These findings suggest that chlorhexidine-based antiseptics are more effective in preventing port catheter-related bloodstream infections and improving patient safety.

Keywords: Transmission, pathogen, chlorhexidine gluconate, port catheter, povidone-iodine



OP - 012

Evaluating Death Literacy and Caregiver Burden in Palliative Care Settings: A Study of Caregivers

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Objective: This study aimed to evaluate the relationship between death literacy levels and caregiver burden among family caregivers of patients in a palliative care unit. It represents a pioneering effort to investigate how knowledge and skills related to the end-of-life process impact the perceived burden of caregiving.

Materials-Methods: This cross-sectional study was conducted with 123 caregivers at a university hospital's palliative clinic in western Türkiye. Data were collected using a demographic characteristics form, the Death Literacy Index (DLI), and the Zarit Caregiver Burden Scale (ZCBS). Statistical analyses included Pearson correlation and multiple linear regression to identify independent predictors of caregiver burden.

Results: The mean age of caregivers was 48.02 ± 12.97 years, with 71.5% being female. The mean DLI total score was 96.29 ± 19.42 , and the mean ZCBS total score was 28.17 ± 18.26 . Caregiver burden was found to be moderately and negatively correlated with death literacy ($r = -0.351$, $p < 0.001$). Regression analysis revealed that age ($\beta = 0.203$), psychological tension ($\beta = 0.365$), physical caregiving difficulty ($\beta = -0.201$), and death literacy ($\beta = -0.234$) were significant independent predictors of caregiver burden ($R^2 = 0.403$, $p < 0.001$). Participants scored highest in "Factual Knowledge" and lowest in "Talking Support" and "Community Support Groups".

Conclusion(s): Death literacy serves as a modifiable protective factor that alleviates caregiver burden. While medical support is essential, integrating programs that enhance death literacy—specifically strengthening community resources and talking support—can improve psychological resilience and the quality of end-of-life care. Palliative care models should transition toward a "family-death-literacy" approach to mitigate the long-term risks of caregiver burnout.

Keywords: Caregiver burden, death literacy, end-of-life care, palliative care



OP - 013

The Impact of a Mandatory Clinical Oncology Nursing Course on Compassion Competence and Moral Sensitivity in Türkiye: A Quasi-Experimental Study

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Objective: Compassion competence and moral sensitivity are essential components of professional nursing practice, particularly in oncology settings where patients experience complex physical and psychosocial challenges. Therefore, this study aimed to examine the impact of a mandatory clinical oncology nursing course on nursing students' compassion competence and moral sensitivity in Türkiye.

Materials-Methods: A quasi-experimental pre-test/post-test design was employed with 170 undergraduate nursing students enrolled in the first mandatory Clinical Oncology Nursing course in Türkiye, which combined seven weeks of theory and seven weeks of supervised clinical practice. Data were collected using the Compassion Competence Scale and Moral Sensitivity Questionnaire. Statistical analyses included paired t-tests, independent samples t-tests, and one-way ANOVA with Bonferroni post-hoc comparisons.

Results: Compassion competence increased from 43.08 ± 7.37 to 48.65 ± 5.93 ($p < .001$), with a mean difference of 5.56 (95% CI: 4.96–6.17) and a large effect size ($d = 1.40$). Moral sensitivity scores decreased from 83.28 ± 24.51 to 73.45 ± 21.06 ($p < .001$), with a mean difference of -9.82 (95% CI: -11.53 to -8.12) and a large effect size ($d = 0.87$). Pre–post changes were also observed across all subscales. Higher compassion competence was observed among female, older, and third-year students, and among those with prior oncology-related coursework or clinical experience ($p < .05$). Greater moral sensitivity was observed among third-year students and those with prior oncology clinical experience ($p < .05$).

Conclusion(s): Integrating theoretical instruction with direct oncology practice enhanced nursing students' compassion, competence, and moral sensitivity, emphasizing the value of experiential and reflective learning in developing ethically grounded and compassionate professionals. Embedding integrated oncology courses that combine theory and clinical experience into undergraduate nursing curricula is recommended to enhance students' ethical sensitivity and compassionate care skills. Expanding such experiential learning opportunities may enhance the professional preparedness of future nurses to address complex ethical and clinical challenges.

Keywords: Compassion competence, curriculum, nursing student, moral sensitivity, oncology nursing

OP - 014

Psychosocial experiences, challenges, and support needs of family caregivers of patients aged 60 years and older in an oncology clinic

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Objective: Family members caring for oncology patients aged 60 and over face a multifaceted care burden due to age-related functional decline and the frequent co-occurrence of multiple chronic conditions alongside cancer. However, there are few studies that thoroughly examine the personal experiences, challenges faced, and support needs of family members caring for cancer patients aged 60 and over. This study aims to investigate the psychosocial experiences, challenges faced, and support needs of family members caring for patients aged 60 and over in an oncology clinic.

Materials-Methods: The research was conducted using a qualitative descriptive design. Data were collected through semi-structured face-to-face interviews, recorded via audio, and the interviews lasted between 35 and 72 minutes. Thirteen family members caring for older oncology patients were included in the study using purposive sampling. The data were analysed using Braun and Clarke's six-step thematic analysis approach. The COREQ Checklist was used to ensure the method was reported comprehensively.

Results: The analysis identified three main themes and seven sub-themes. The main themes were: (1) the emotional burden of the caregiving process, (2) the psychosocial impact of the disease process on family relationships, and (3) the need for psychosocial support and the inadequacy of support services. Participants stated that witnessing their loved ones' suffering and the possibility of death led to intense feelings of anxiety and helplessness. Furthermore, it was emphasised that the disease process made family communication difficult, behavioural changes such as anger and impatience were observed in patients, and the daily routine was disrupted. Participants stated that they required professional psychological support; however, they noted that access to such support was limited and that they expected greater psychosocial support from the healthcare team.

Conclusion(s): The process of caring for elderly cancer patients places a significant emotional burden on family members, leading to disruptions in family dynamics and unmet psychosocial support needs. These findings indicate that oncology clinics should systematically assess not only patients but also family carers, and that family-centred, supportive care models should be implemented. Furthermore, the findings suggest that the Consultation-Liaison Psychiatry (CLP) nurse can play a key role in identifying carers' psychosocial support needs at an early stage, providing psychoeducation, and strengthening their coping skills. Consequently, this study suggests a family-oriented, continuous care model in which the oncology nurse and the CLP nurse work in an integrated manner to alleviate the unseen burden on family members caring for elderly oncology patients.

Keywords: Care burden, psychosocial support, end-of-life care, elderly people

INTRODUCTION

The management of complex care needs arising from cancer and age-related health decline is a task that is very important for family caregivers of oncology patients aged 60 years and older. The growing number of



older adults with cancer, alongside the frequent presence of multiple chronic conditions, places a significant physical, emotional and financial burden on these caregivers. (Bongelli et al., 2024; Botas et al., 2025). Significant psychosocial challenges are often the result of caregiving responsibilities. These challenges can include heightened stress, anxiety, depression, social isolation and shifts in family dynamics. (Botas et al., 2025; Ribera-Asensi, Pérez-Marín, & Valero-Moreno, 2026; Wiener et al., 2020) The experiences and support needs of family caregivers, who play a crucial role, have not been well researched, especially in oncology settings that focus on older patients. (Botas et al., 2025). Frequently, older cancer patients experience functional decline, meaning they often need extensive assistance with their daily activities and medical management. This, in turn, intensifies the demands on their caregivers (Bongelli et al., 2024; Botas et al., 2025). The challenge of coordinating care for comorbidities alongside cancer treatments can further increase the emotional burden on caregivers, often leading to feelings of exhaustion and burnout (Spatuzzi et al., 2020). Families face further challenges due to financial strain caused by treatment costs and caregiving expenses (Botas et al., 2025). Furthermore, caregivers often report having insufficient information and training to manage the medical and psychosocial aspects of care effectively (Botas et al., 2025). In order to address these challenges, it is essential to have a comprehensive understanding of the psychosocial experiences and support needs of caregivers. The provision of informational, emotional, practical and financial support is crucial for sustaining caregiver well-being and optimising patient health outcomes (Botas et al., 2025). Effective communication between healthcare providers and family caregivers is also crucial for involving caregivers in decision-making and care planning (Bongelli et al., 2024). This qualitative study aims to address this gap by investigating the complex experiences, challenges and support needs of family caregivers of oncology patients aged 60 and over. This will inform targeted interventions in oncology clinics.

MATERIALS AND METHODS

A qualitative descriptive approach was adopted to provide a comprehensive understanding of the psychosocial experiences, challenges faced, and support needs of family members caring for patients aged 60 and over in an oncology clinic.

Sample and recruitment

Purposive sampling (Campbell et al., 2020) was used to enrol nurses who had experienced the death of a child with a life-threatening condition. Purposive sampling is a method of data collection. It involves selecting participants with specific characteristics. These participants are chosen to enhance understanding of the issues under study.

Data collection

After obtaining consent from 13 family members caring for oncology patients, face-to-face interviews were conducted. The recorded interviews lasted between 35 and 72 minutes. In order to test the suitability of the questions, three pilot interviews were conducted (these interviews were excluded from the data analysis) and no significant changes were required.

DATA ANALYSIS

Reflexive thematic analysis developed by Braun and Clarke was used to analyse the data (Braun & Clarke, 2023). This flexible method enables researchers to explore and report participants' experiences, meanings and realities.

RESULTS

The analysis identified three main themes and seven sub-themes. The main themes were: (1) the psychological burden during the caregiving process, (2) the psychosocial impact of the disease process on family relationships, and (3) the need for psychosocial support and the inadequacy of support services.

Psychological Burden During the Caregiving Process

Participants stated that witnessing their loved ones' suffering and the possibility of death led to intense feelings of anxiety and helplessness. This theme revealed that caregiving was not only perceived as a practical responsibility but also as an emotionally draining process. Participants described the distress they felt when witnessing the patient's physical decline, pain, and increasing dependency. Feeling unable to alleviate the

patient's pain strengthened their sense of helplessness. Additionally, thoughts of death caused fear, sleep disturbances, and anxiety among caregivers. Participants also indicated that the disease process affected the psychological well-being of other family members.

Psychosocial Impact of the Disease Process on Family Relationships

Furthermore, it was emphasised that the disease process made family communication difficult, behavioural changes such as anger and impatience were observed in patients, and the daily routine was disrupted. Participants reported that emotional and behavioural issues experienced by patients sometimes caused tension, misunderstandings, and withdrawal from family communication. Caregivers reported that they often chose to remain silent to avoid conflict.

The findings also showed that caregiving disrupted personal life and family routines. Participants mentioned that they had restricted time for themselves, limited privacy, and reorganised daily responsibilities around the patient's needs. In some cases, caregiving also resulted in changes to family roles, as well as the delay or abandonment of education, work, or future plans.

Need for Psychosocial Support and Inadequacy of Support Services

Participants stated that they required professional psychological support; however, they noted that access to such support was limited and that they expected greater psychosocial support from the healthcare team. They highlighted that being able to speak with a professional or have their concerns listened to by healthcare staff could help them deal with the emotional challenges of caregiving. However, they perceived the psychosocial support available as lacking in quality and consistency and not integrated into routine care.

DISCUSSION

The findings of this study highlight the significant emotional impact of caregiving and the complex relational dynamics experienced by family caregivers of oncology patients aged 60 years and older. Three main themes were identified: (1) the psychological burden during the caregiving process, (2) the psychosocial impact of the disease process on family relationships, and (3) the need for psychosocial support and the inadequacy of existing support services.

The results of the analysis of the psychosocial experiences of family caregivers of oncology patients aged 60 and over highlight the significant emotional impact and intricate relational patterns influenced by the disease process. Adverse mental health outcomes, including prolonged grief and psychopathology, have been linked to caregiving by researchers who have identified emotional strain as a key mediator. (Ribera-Asensi, Pérez-Marín, & Valero-Moreno, 2026) The psychological impact on caregivers is twofold: it directly impacts their well-being and exacerbates experiences of distress and burnout. The study's finding that caregivers experience a great deal of anxiety is in line with research among family caregivers in palliative and critical care settings, where uncertainty and advanced grief significantly contribute to psychological distress. (Blok et al., 2023) Moreover, research in this area has found that anxiety about death can have a negative effect on quality of life. This highlights the importance of specific psychosocial interventions that deal with both the practical aspects of caring for someone and the deeper, existential issues involved. (Soleimani et al., 2017)

The most important theme is the fact that caregivers say they need professional psychological support, but that such services are not easily accessible. Despite the considerable emotional and practical demands, caregivers frequently find their psychosocial resources inadequate or inaccessible, a discrepancy that intensifies their load and increases their mental health risks. This is consistent with evidence that many distressed caregivers do not make full use of mental health services, even when they are clinically necessary, due to barriers such as a lack of information, stigma, or inadequate referral pathways. (Bongelli et al., 2024)

The findings highlight the urgent need for oncology clinics to provide family caregivers of older adults with a comprehensive psychosocial assessment and support service. Timely referrals to mental health and social support services can be facilitated by proactive identification of emotional distress and caregiving challenges by healthcare providers. By working together across different fields, such as psychosocial oncology, professionals can improve the connection between medical treatment and caregiver well-being. (Washington et al., 2019).



CONCLUSION

The process of caring for elderly cancer patients places a significant emotional burden on family members, leading to disruptions in family dynamics and unmet psychosocial support needs. These findings highlight the importance of healthcare systems prioritising psychosocial support for caregivers, improving access to mental health support and fostering inclusive communication practices in oncology care. The findings also indicate that oncology clinics should systematically assess not only patients but also family carers, and that family-centred, supportive care models should be implemented. Furthermore, the findings suggest that the Consultation-Liaison Psychiatry (CLP) nurse can play a key role in identifying carers' psychosocial support needs at an early stage, providing psychoeducation, and strengthening their coping skills. Meeting these needs will improve the well-being of caregivers and optimise patient outcomes by ensuring the continuity of the vital caregiving role throughout the cancer journey. Consequently, this study suggests a family-oriented, continuous care model in which the oncology nurse and the CLP nurse work in an integrated manner to alleviate the unseen burden on family members caring for elderly oncology patients.

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OP - 015

Symptoms, Symptom Burden, and Influencing Factors in Patients Treated with Nivolumab

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Objective: Immune checkpoint inhibitors such as nivolumab are increasingly used in cancer treatment; however, treatment-related adverse effects may negatively impact patients' well-being and quality of life. This study aimed to determine the symptom burden and associated factors among patients receiving nivolumab immunotherapy.

Materials-Methods: This descriptive, cross-sectional study was conducted between October 2024 and January 2025 in the medical oncology clinic of a university hospital. A total of 53 patients receiving nivolumab immunotherapy were included. Data were collected through face-to-face interviews using a Patient Information Form, a 40-item Symptom Assessment Form, and the ECOG Performance Status Scale. Descriptive and comparative statistical analyses were performed to identify symptom burden and influencing factors.

Results: The most frequently reported symptoms were dermatological toxicities, including skin dryness (20.8%) and pruritus (18.9%), gastrointestinal symptoms such as constipation (15.1%), and respiratory symptoms including fatigue (17.0%), cough (17.0%), and dyspnea (15.1%). Neurological symptoms, particularly numbness and tingling in the hands and feet, were reported by 11.3% of patients. Among endocrine toxicities, hypothyroidism was observed in 20.8% of participants. Patients receiving concurrent chemotherapy experienced a significantly higher symptom burden compared with those receiving nivolumab alone. Furthermore, patients reporting adequate and balanced nutrition experienced fewer and less severe symptoms. The majority of participants demonstrated good functional status, with 81.1% classified as fully active according to the ECOG Performance Status Scale.

Conclusion(s): Patients receiving nivolumab experience a range of immune-related adverse events, with symptom burden influenced by both treatment-related and lifestyle factors. Concurrent chemotherapy appears to increase symptom burden, whereas adequate nutritional status may contribute to reduced symptom severity. Regular symptom monitoring and supportive interventions, including nutritional counseling, may help optimize symptom management and improve patient outcomes during nivolumab treatment.

Keywords: Nivolumab; cancer; symptom burden; symptom management; immunotherapy; immune-related



OP - 016

Identification of Symptom Clusters in Cancer Patients with Abdominal Ascites

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Objective: Abdominal ascites is an important clinical condition within symptom clusters, leading to the simultaneous occurrence of multiple symptoms. A review of the literature indicates that, in oncology care, patients with abdominal ascites experience a significant decline in comfort and a reduced quality of life. Symptoms such as sleep disturbances, pain, loss of appetite, and dyspnea are frequently observed. In addition, bone pain may also accompany this condition. In this context, identifying symptom clusters is considered to contribute to the planning of nursing interventions, reduce symptom burden, and improve patients' comfort. Therefore, the aim of this study is to determine symptom clusters in cancer patients with abdominal ascites.

Materials-Methods: The study was conducted with 68 patients diagnosed with cancer who were hospitalized between July 2024 and October 2025 in the Oncology Service of the Muzaffer Kayhan Oncology Building and the Hematology Service of the İlhan Onat Building at Dokuz Eylül University Hospital. The study data were collected through face-to-face interviews using the Descriptive Information Form, the Memorial Symptom Assessment Scale, and the ECOG Performance Status Scale. Data analysis was performed using the SPSS 27 software package. Descriptive statistics, including frequencies and percentages, were used to summarize patients' sociodemographic characteristics. Factor analysis and cluster analysis were employed to determine the types and numbers of symptom clusters. Pearson correlation analysis was conducted to examine the relationships between symptoms and independent variables, including age, sex, occupation, educational status, comfort score, year of diagnosis, presence of chronic disease, history of paracentesis, daily drained fluid volume, presence of an ascites drainage catheter, and presence of a caregiver. Data were presented as frequencies and percentages in tables, and the level of statistical significance was set at $p < 0.05$. Statistical analyses were evaluated within a 95% confidence interval.

Results: It was determined that patients experienced pain, abdominal distension, and restlessness due to abdominal ascites. All patients were found to experience fatigue or loss of energy, a sensation of bloating, and changes in the skin. A total of ten symptom clusters were identified: Gastrointestinal Cluster, Psychological Cluster, Skin Cluster, Sleep Cluster, Body Image Cluster, Nausea Cluster, Urinary System Cluster, Fatigue Cluster, Circulatory Cluster, General Condition Impairment Cluster, and Comfort Cluster.

Conclusion(s): The mean comfort score of the patients was 4.22, the mean ECOG Performance Status score was 2.82, and the mean MSAS score was 2.22. No statistically significant difference was found between MSAS scores in relation to patients' receipt of paracentesis or the presence of a drainage catheter.

Keywords: Cancer, ascites, symptom clusters, nursing



OP - 017

Prediction of Difficult Venous Access in Adults: An Analysis of Available Scales and a Proposal for Implementation in Clinical Practice in the Czech Republic

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Objective: Difficult peripheral intravenous access (DIVA) affects a substantial proportion of the adult population and is associated with increased pain, patient distress, and prolonged diagnostic and therapeutic processes. DIVA also raises material costs and staff workload and may delay treatment or surgery. Within the Czech healthcare system, no validated predictive tools for DIVA identification are currently available. The aim of this study was to identify existing prediction scales, compare their characteristics, and assess the feasibility of their implementation in Czech clinical practice.

Materials-Methods: The study was designed as a combined methodological analysis conducted in two main phases: (1) systematic identification and selection of DIVA prediction scales by searching the Web of Science and Scopus databases, and (2) expert appraisal of the selected tools by a five-member clinical expert panel. The panel evaluated the content and clinical relevance of the scales, their feasibility under Czech conditions, the degree of subjectivity, and their potential contribution to practice.

Results: The analysis included the following predictive tools: A DIVA, SAFE Rule, A DICA VE, EA DIVA, and DIVA CP. According to current evidence, the first three scales appear most suitable for a broad adult population. A DIVA demonstrates good predictive value and external validity but focuses primarily on first attempt cannulation failure. The SAFE Rule is a simple screening rule based on the most common DIVA predictors but lacks formal scoring and risk stratification. A DICA VE is a fast three item tool suitable especially for emergency departments, though it has only been internally validated.

Conclusion(s): Although no universal predictive instrument exists, the available tools provide an effective framework for identifying high risk patients and optimizing cannulation techniques. For Czech healthcare, translation and validation studies of the most promising tools for the general adult population (A DIVA, SAFE Rule, A DICA VE) and for the oncology population (DIVA CP) are essential, along with the development of standardized care algorithms that prioritize ultrasound guidance and limit "blind" attempts.

Keywords: Difficult Intravenous Access (DIVA), clinical application, peripheral venous cannulation, prediction scales



OP - 018

Mapping Oncology Nursing Education in Medical Nursing Master's Programs in Türkiye: A National Curriculum Analysis

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Objective: The aim of this study is to determine the presence of oncology nursing-related courses in the-
sis-based Medical Nursing (Internal Medicine Nursing) master's programs in Türkiye, to examine the struc-
tural characteristics of these courses, and to systematically evaluate the thematic distribution of the content
offered within the curricula.

Materials-Methods: This study was conducted using a document analysis design. The official websites of
universities in Türkiye and their Bologna information packages were reviewed between January and Febru-
ary 2026. Among a total of 161 universities, 51 master's programs offering thesis-based education in Medical
Nursing (Internal Medicine Nursing) were identified. One program for which curriculum data could not be
accessed was excluded, and the analyses were conducted on 50 programs. The presence of oncology nurs-
ing-related courses in these programs was evaluated in terms of course title, compulsory/elective status,
ECTS credits, and weekly theoretical and practical hours. Course contents were classified according to pre-
defined categories using thematic analysis based on weekly course topics.

Results: It was determined that 66% (n=33) of the programs included a course specifically related to oncolo-
gy nursing. All of these courses were found to be elective. The most commonly used course title was "Oncol-
ogy Nursing" (78.8%). ECTS credits ranged from 2 to 9, with a mean of 5.60. Weekly theoretical course hours
were 2 hours in 57.6% of the programs and 3 hours in 42.4%. It was found that 81.8% of the programs did not
include a practical component. In programs where weekly content distribution was accessible (n=28), anal-
ysis revealed that fundamental oncology knowledge (96.4%), professional roles and responsibilities (92.9%),
and symptom management (89.3%) were included in the majority of programs. In contrast, palliative care
(64.3%) and especially oncologic emergencies (50.0%) were covered in a more limited number of programs.

Conclusion(s): It was determined that oncology nursing courses in thesis-based Medical Nursing (Internal
Medicine Nursing) master's programs in Türkiye show a heterogeneous distribution in terms of both pres-
ence and scope. The absence of oncology nursing-specific courses in all programs suggests that this area has
not yet become a standardized component at the graduate level. Additionally, the lack of a practical compo-
nent in most programs and the limited coverage of clinically critical areas such as palliative care and onco-
logic emergencies indicate important gaps in curriculum structuring. These findings highlight the need for
standardization in oncology nursing education and for strengthening clinically oriented content.

Keywords: Medical nursing, nursing education, oncology nursing

OP - 019

The Importance of Nursing Approaches in Symptom Management in Patients Receiving Targeted Therapy

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Objective: Although targeted therapies have improved survival outcomes in cancer care, their side effects can adversely affect patients' quality of life. Nursing care and patient education are essential for the early recognition and effective management of these effects. This study aimed to evaluate the frequency and severity of side effects among patients receiving targeted therapy and to examine the role of patient education in symptom management.

Materials-Methods: A total of 60 patients receiving targeted therapy between January and March 2026 were retrospectively analyzed. Demographic and clinical characteristics, side effect profiles and grades (Grade 1–4), patient dependency level, dose reduction, supportive treatment, and symptom regression were evaluated. Statistical analysis was performed using the chi-square test, with $p < 0.05$ considered significant.

Results: The mean age of participants was 58 ± 13.5 years, and 70% were female. Breast (46.7%), colorectal (13.3%), and brain cancers (10%) were the most common diagnoses, with most patients having advanced-stage disease. Side effects were reported by 68.3% of patients, most commonly fatigue (21.7%), rash (6.7%), and pain (5%). The majority were mild (Grade 1–2, 55%), while 13.3% were severe (Grade 3–4). Higher-grade toxicities were more frequent among patients receiving antibody-drug conjugates and immunotherapy. Although no significant association was found between treatment group and toxicity grade ($p = 0.077$), greater side effect severity was associated with higher patient dependency levels ($p = 0.041$) and increased dose reductions ($p = 0.009$). All patients with side effects received education; 53.7% also received supportive treatment. Symptom improvement was observed in 87.8% of patients, suggesting that education and close monitoring may effectively support the management of mild treatment-related side effects.

Conclusion(s): Targeted therapies are generally well tolerated; however, higher-grade side effects are more frequent with antibody-drug conjugates and immunotherapy. Patient education and supportive care play a key role in symptom control, particularly in the management of mild side effects.

Keywords: nursing care, symptom management, patient education, targeted therapy

INTRODUCTION

Recent advances in cancer treatment, particularly the widespread use of targeted therapies in clinical practice, have led to a significant increase in patient survival rates. These therapies have a more selective mechanism of action compared to conventional chemotherapy, as they act on specific molecular targets of tumor cells. However, despite this selectivity, targeted therapies are not entirely free of side effects. On the contrary, the specific adverse effect profiles associated with these treatments can significantly affect patients' quality

of life (Postow, Sidlow & Hellmann, 2018). In particular, modern treatment approaches such as immunotherapies and antibody–drug conjugates (ADCs) may lead to different and sometimes severe adverse events related to immune system activation. These side effects are not limited to physical symptoms but may also affect patients' psychosocial status (Brahmer et al., 2018). Therefore, early identification and effective management of symptoms are critical for the success of the treatment process.

Nurses, as the healthcare professionals with the most frequent contact with patients, play a central role in monitoring, early detection, and management of side effects. At the same time, patient education is an essential component that enables individuals to recognize and appropriately manage their own symptoms. The literature clearly demonstrates that patient education has positive effects on symptom control, treatment adherence, and quality of life (Postow et al., 2018).

In this context, examining the contribution of nursing care and patient education to symptom management in patients receiving targeted therapy provides important data for clinical practice. This study aimed to evaluate the frequency and severity of side effects and the role of patient education in symptom management among patients receiving targeted therapy.

MATERIALS AND METHOD

This study was conducted through a retrospective review of data from patients receiving targeted therapy between January and March 2026. A total of 60 patients were included in the study. Within the scope of the research, patients' demographic characteristics (age, gender), clinical diagnoses, and disease stages were examined. In addition, side effects occurring during the treatment process, the severity of these side effects (Grade 1–4), patient dependency levels, dose reductions applied, supportive care interventions, and symptom regression status were evaluated. Side effects were categorized in accordance with clinical classifications as mild (Grade 1–2) and severe (Grade 3–4). Chi-square test was used for data analysis, and $p < 0.05$ was considered statistically significant.

RESULTS

70% of the patients were female, and the mean age was 58 ± 13.5 years. 46.7% ($n=28$) were receiving treatment for breast cancer, 13.3% ($n=8$) for colorectal cancer, and 10% ($n=6$) for brain tumors. Of the cases, 48.3% ($n=29$) were Stage 4, 36.7% ($n=22$) were Stage 3, and 15% ($n=9$) were Stage 2.

While 31.7% ($n=19$) of patients experienced no side effects, 68.3% ($n=41$) developed at least one adverse effect. The most common side effect was fatigue (21.7%), followed by rash (6.7%) and pain (5%). Of the reported side effects, 55% were Grade 1–2, while 13.3% were Grade 3–4. It was found that 87.5% of high-grade side effects occurred in the antibody–drug conjugate (ADC) and immunotherapy groups. Grade ≥ 2 side effects were more prominent in the ADC group, whereas in the targeted therapy group, side effects were predominantly Grade 1. No statistically significant association was found between drug group and severity of side effects ($\chi^2=5.12$, $p=0.077$).

A statistically significant association was found between patient dependency level and severity of side effects ($\chi^2=4.18$, $df=1$, $p=0.041$), indicating that severe adverse effects were more frequent in patients with higher dependency levels. It was also observed that as the severity of side effects increased, dose reduction rates increased, and this relationship was statistically significant ($\chi^2=6.67$, $df=1$, $p=0.009$).

All patients who developed side effects ($n=41$) received medication side effect education. While 22 of these patients (53.7%) received supportive treatment, 19 patients (46.3%) did not. Symptom regression was observed in 36 patients (87.8%), whereas no symptom improvement was seen in 5 patients (12.2%). The high rate of symptom regression among patients who did not receive supportive treatment suggests that the side

Table 1. Evaluation of Clinical Outcomes According to Adverse Event Severity

Adverse Event Grade	n (%)	Dose Reduction n (%)	Supportive Treatment n (%)	Symptom Improvement, n (%)
Grade 1–2	36 (87.8%)	6 (~16%)	18 (50%)	33 (91.6%)
Grade 3–4	5 (12.2%)	3 (60%)	4 (80%)	3 (60%)

As all patients with adverse events received education, its independent effect could not be statistically evaluated.

effects in this group were more manageable. These findings highlight the importance of patient education and close monitoring in the management of mild side effects.

DISCUSSION

The findings of this study demonstrate that side effects are common in patients receiving targeted therapies; however, they are largely manageable. The frequent occurrence of symptoms such as fatigue, rash, and pain is consistent with findings reported in the literature (Postow et al., 2018).

The higher incidence of severe adverse effects in the immunotherapy and antibody–drug conjugate (ADC) groups can be explained by the impact of these treatments on the immune system. This highlights the need for closer monitoring and more effective symptom management, particularly in these patient groups (Brahmer et al., 2018).

The significant association between patient dependency level and severity of side effects suggests that vulnerable patient groups require more careful evaluation. This finding supports the need for individualized nursing care.

One of the most notable findings of this study is the effective role of patient education in symptom management. The high rate of symptom regression observed even among patients who did not receive supportive treatment suggests that education and close monitoring may be sufficient for managing mild side effects. This clearly demonstrates the impact of the nursing role as an educator on clinical outcomes.

CONCLUSION AND RECOMMENDATIONS

Although targeted therapies are generally well tolerated, more severe adverse effects may occur, particularly with treatment modalities such as immunotherapy and antibody–drug conjugates. Effective management of these side effects is critical for treatment success. Patient education and nursing care play an important role in the early identification and control of symptoms. In particular, patient education and regular monitoring may be sufficient for managing mild side effects. Therefore, it is recommended that patient education be systematically planned and implemented in clinical practice.

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OP - 020

Prevention of Colorectal Cancers, Determination of Colorectal Cancer Awareness

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Objective: Early diagnosis and screening are of great importance in the prevention of colorectal cancer. The World Health Organization recommends preventive programs for this purpose. This study aimed to determine the preventive behaviors and awareness levels of individuals who underwent colonoscopy.

Materials-Methods: This study included 170 patients who applied to the gastroenterology outpatient clinic of a foundation university in Türkiye between October 1 and December 1, 2022, and underwent colonoscopy. The clinic serves approximately 400 patients per month. The calculated sample size was 157; however, the study was completed with 170 participants aged 20 years and older who volunteered, could communicate, and had no cancer diagnosis. Data were analyzed using percentages, means, and standard deviations. Independent samples t-test, one-way ANOVA, and post hoc tests were used for statistical comparisons.

Results: The mean age of participants was 42.99±14.90 years, and 62.4% were female. Most were married (65.3%), employed (65.9%), and lived in the city center (80.6%). While 42.9% had normal body mass index, 94.7% did not consume alcohol and 67.1% did not smoke. Regular exercise was low, with only 11.2% exercising daily. Chronic diseases were present in 41.2% of participants, most commonly hypertension (17.1%) and diabetes (14.7%). A majority (77.6%) had not undergone colorectal cancer screening, and 64.1% were unaware of the recommended screening age. The mean score of the colorectal cancer screening attitude and belief scale was 52.09±10.49, indicating slightly above-average attitudes. Subscale scores showed moderate levels of sensitivity perception and cancer concern. Men had significantly higher cancer anxiety scores than women. Married individuals scored higher than singles across all subdimensions. Underweight individuals had higher scale scores than normal and overweight individuals. Participants who exercised daily had significantly lower cancer anxiety than those exercising rarely ($p<0.05$).

Conclusion(s): Individuals show moderate awareness and positive attitudes toward colorectal cancer screening and are willing to participate in screening programs.

Keywords: Colorectal cancers, awareness, prevention

Post-transplant Experiences in Adolescent Bone Marrow Transplantation: A Physical, Psychosocial, and Developmental Review

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Objective: This review aims to comprehensively examine the physical, psychosocial, and developmental experiences of adolescents undergoing hematopoietic stem cell transplantation (HSCT) in the post-transplant period.

Materials-Methods: A non-systematic review approach was employed to analyze qualitative and quantitative studies focusing on adolescents' HSCT experiences. Findings were thematically synthesized under four main domains: physical changes, psychosocial impacts, adaptation processes, and adolescent-specific developmental issues.

Results: In the early post-transplant period, adolescents commonly experience significant physical challenges, including pain, fatigue, gastrointestinal complications, and infection-related restrictions. Concurrently, treatment-related changes in appearance (e.g., weight fluctuations, skin alterations, hair loss, and catheter scars) negatively affect body image and may lead to social withdrawal. Psychosocially, the first year is often characterized by decreased self-esteem, reduced social competence, anxiety, and fear. Overprotective parental attitudes, particularly from mothers, may further limit adolescents' autonomy. Despite these challenges, many adolescents gradually develop a "new normal," reporting emotional maturation, improved self-perception, and enhanced social adjustment over time. Long-term follow-up studies indicate that most individuals report good or normal quality of life, although a minority continue to experience persistent psychosocial difficulties. Additionally, eating-related changes, identity development, and participation in treatment decision-making emerge as critical adolescent-specific concerns.

Conclusion(s): HSCT represents a complex and multidimensional experience for adolescents. Although the early post-transplant period is marked by substantial physical and psychosocial difficulties, many adolescents demonstrate resilience and positive adaptation over time. Integrating psychosocial support with medical care, while addressing developmental needs and family dynamics, is essential to optimize long-term outcomes.

Keywords: Adolescent, body image, hematopoietic stem cell transplantation, quality of life

OP - 022

Symptoms and impact on quality of life in patients receiving 5-fluorouracil treatment via elastomeric infusion pump

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Objective: This study was conducted to investigate the symptoms that may develop in patients receiving 5-fluorouracil (5-FU) treatment via an elastomeric infusion pump and the impact of these symptoms on their quality of life.

Materials-Methods: The study was conducted between February and July 2025 in the oncology day treatment unit of a university hospital, and included a total of 112 patients aged 18 and over who were undergoing treatment and agreed to participate. Data were collected using a "Patient Identification Form" containing socio-demographic and clinical characteristics of the patients, the Rotterdam Symptom Checklist (RSC), and the World Health Organization Quality of Life Scale (WHOQOL-BREF), and analyses were performed using SPSS 26 software. The internal consistency reliability of the scales used in the study was evaluated using the Cronbach's alpha coefficient (α). According to the analysis results, the total internal consistency coefficient of the RSC was found to be $\alpha=0.877$, indicating that the scale has a good level of reliability. When the sub-dimensions were examined, the Cronbach's alpha coefficient for the psychological symptom/discomfort sub-dimension was found to be $\alpha=0.871$, for the physical discomfort sub-dimension $\alpha=0.817$, and for the daily living activities sub-dimension $\alpha=0.798$.

Results: The most common symptoms in patients were weight loss, energy loss, and peripheral neuropathy. Patients' quality of life scores were found to be moderate, with lower scores particularly in the physical health domain. Correlation analyses revealed moderate negative and significant relationships between symptom burden and quality of life. Significant and persistent negative correlations ($p<0.001$) were also found between the total RSC score and physical health ($r=-0.563$), psychological domain ($r=-0.621$), social relationships ($r=-0.357$), and ratio domain ($r=-0.388$). These results indicate a decrease in emotional burden across all areas of life. Symptom intensity was found to decrease across all sub-dimensions of the life domain. Significant differences were observed in some sub-dimensions based on gender and age. Furthermore, it was determined that symptoms caused impairment in daily living activities and continued functional independence.

Conclusion(s): Accordingly, it has been concluded that addressing symptom management with a multidisciplinary approach, and especially the active role of nursing care in this process, is critically important in improving quality of life. The transition of patient care to an outpatient setting includes not only care practices but also education and counseling responsibilities in nursing.

Keywords: 5-fluorouracil, elastomeric infusion pump, symptom burden, quality of life, chemotherapy

Catheter Management and Nursing Care in Therapeutic Apheresis Procedures: A Systematic Review

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Objective: Therapeutic apheresis is an important and widely used treatment modality in the management of hematological and immunological diseases. Ensuring adequate and safe vascular access during these procedures is critical for procedural success and patient safety. In recent years, the use of alternative vascular access methods such as peripheral venous catheters, midline catheters, and peripherally inserted central catheters (PICC) has increased as an alternative to central venous catheters. This systematic review aims to evaluate the effectiveness and safety of different catheter types used in apheresis procedures and to examine the role of catheter management and nursing care.

Materials-Methods: In this systematic review, studies published between 2016 and 2026 were searched in Google Scholar, PubMed, Scopus, and Web of Science databases. The keywords “therapeutic apheresis,” “central venous catheter,” “vascular access,” “catheter-related complications,” and “nursing care” were used. Randomized controlled trials, non-randomized experimental studies, cohort studies, prospective and retrospective observational studies, as well as cross-sectional, longitudinal, and descriptive studies were included. Review articles, case reports, and studies published in languages other than English were excluded. The study selection process was conducted in accordance with PRISMA guidelines.

Results: The reviewed studies indicate that different vascular access methods can be successfully used in therapeutic apheresis procedures with appropriate patient selection. Midline and PICC catheters were found to provide adequate blood flow rates and to serve as safe and effective alternatives to central venous catheters, with low complication rates. Peripheral venous catheters were also reported to yield comparable clinical outcomes in some studies. Additionally, smaller-diameter catheters may reduce vascular trauma and improve patient comfort. However, the level of evidence is limited due to the small sample sizes and predominantly observational design of the included studies.

Conclusion(s): Different vascular access methods can be used safely and effectively in therapeutic apheresis procedures with appropriate patient selection and effective catheter management. Nursing care plays a fundamental role in catheter selection, monitoring, maintenance, and the early detection and prevention of complications. Therefore, strengthening nurses' knowledge and skills in vascular access management may contribute to improved patient safety and clinical outcomes. However, due to the limited available evidence, further large-scale studies with higher methodological quality are needed in this field.

Keywords: Therapeutic apheresis, vascular access, catheter management, nursing care, complications

INTRODUCTION

Therapeutic apheresis (TA) is a treatment widely used in the management of various disorders, enabling the removal or exchange of specific blood components in an extracorporeal setting (1). The safety and effectiveness of these procedures depend on establishing adequate and sustainable vascular access. The type of catheter used during apheresis plays a decisive role in blood flow rate, procedure duration, cell collection efficiency, and the risk of complications. It has been reported that catheter-related infections, thrombosis, and mechanical complications can negatively affect the apheresis process and reduce patient comfort (2). Therefore, selecting an appropriate vascular access method and managing catheters effectively are critical in TA (3).

The use of various vascular access methods—such as peripheral venous catheters, midline catheters, and peripherally inserted central catheters (PICCs)—has steadily increased as alternatives to central venous catheters (4,5). These methods have the potential to reduce the need for invasive procedures, lower the risk of complications, and improve patient comfort (4). However, studies comparing the efficacy and safety of different catheter types remain limited, and existing findings are heterogeneous. Furthermore, the role of nursing care in the catheter management process is gaining importance and is emerging as a key determinant in enhancing patient safety and quality of care. Therefore, there is a need for a comprehensive evaluation of the vascular access methods used in TA. This systematic review aims to evaluate the effectiveness and safety of different catheter types used in apheresis and to highlight the role of catheter management and nursing care.

Research Questions

- What is the effectiveness of different vascular access methods used in TA procedures?
- Are there differences among these catheter types in terms of blood flow rate, procedure duration, and cell collection efficiency?
- What are the complication rates associated with catheters used in TA procedures, and do they vary by catheter type?
- How do catheter management and nursing care affect patient safety and procedure success in TA procedures?

MATERIALS AND METHODS

Study Design

This is a systematic review, and the PRISMA-P (Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols) checklist was used as a guide (6). As this study is a systematic review, it does not require ethics committee approval.

Databases Used in the Study

The databases used in this study were Google Scholar, PubMed, Scopus, and Web of Science.

Study Population and Sample

In this systematic review, studies published between 2016 and 2026 were screened in the specified databases. Articles were identified using the keywords “therapeutic apheresis,” “central venous catheter,” “vascular access,” “catheter-related complications,” and “nursing care.” Studies that appeared to meet the inclusion criteria based on their titles and abstracts were selected for review (n=20). After full-text review, studies meeting the inclusion criteria were included in the final analysis (n=8). This process is presented in Figure 1 using numerical data in accordance with the PRISMA flowchart.

Inclusion and Exclusion Criteria

Studies published in peer-reviewed journals, written in English, and available in full text were included in the review. Eligible study designs included randomized controlled trials, non-randomized experimental studies, cohort studies, prospective and retrospective observational studies, cross-sectional, longitudinal, and descriptive studies. In addition, the reference lists of the included articles were also screened to identify further relevant studies. Studies were excluded if full-text access was not available, if they were review articles, if they were not published in English, or if they investigated apheresis procedures other than therapeutic apheresis (TA).

DATA ANALYSIS

The Joanna Briggs Institute Data Extraction Tool (JBI-MAStARI) was used for the analysis of studies included in this systematic review (7). Data extraction was independently performed by two external experts and one researcher, all of whom hold PhD degrees in internal medicine nursing. Studies were included in the final analysis after consensus was reached, and were then transferred into a standardized data summary form.

The data summary form (Table 1) included the following items: authors and year, objective, study design, sample size, measurement tools, and results.

Table 1. Characteristics of the Studies Included in the Systematic Review

Author and Year	Aim	Design	Sample Size	Measurement Tools	Results
Livingston et al., 2021	To evaluate the feasibility and safety of peripheral venous catheter (PVC) use for HSC and IEC collection and compare with central venous catheter (CVC).	Comparative observational study	33 PVC attempts (32 successful), 18 CVC patients	Blood flow rate, procedure duration, collection efficiency, adverse events	PVC collection was successful in 97% of cases. No significant differences between PVC and CVC regarding flow rate, procedure duration, or collection efficiency.
Armendariz et al., 2021	To compare a 20G fenestrated catheter with an 18G standard catheter.	Randomized non-inferiority pilot study	26 patients, 74 procedures	Inlet flow rate, return pressure, blood processed, procedure time	No significant differences were found. The 20G catheter was non-inferior and may reduce vein trauma.
Doberschuetz et al., 2019	To compare preimplanted Hickman catheters with temporary Shaldon catheters in pediatric leukapheresis.	Retrospective comparative study	48 procedures (43 Hickman, 5 Shaldon)	CD34+ cell count, procedural success, collection efficiency, complications	No significant differences between groups. No adverse events were observed.
Geile et al., 2024	To evaluate midline catheters for pediatric apheresis procedures.	Retrospective study	22 patients, 121 procedures	Blood flow rate, catheter-related complications, procedural success	Midline catheters provided adequate blood flow with only one thrombosis case and no infections.
Caime et al., 2020	To evaluate midline catheter use for HPC collection in patients with poor peripheral access.	Prospective observational study	6 participants, 8 catheter placements	Blood flow rate, CD34+ cell dose, complications	Target cell dose achieved in all patients. No complications occurred.
Kremer et al., 2024	To assess the use of high-flow PICC catheters for apheresis and infusion.	Retrospective clinical pilot study	5 pediatric patients	CD34+ cell count, cell viability, catheter duration, procedure time, complications	Successful stem cell collection in all patients. No thrombosis or bloodstream infections observed.
Casacchia et al., 2021	To evaluate the safety and efficacy of midline catheters in pediatric and adult patients.	Retrospective observational study	18 subjects, 100 catheters, 73 procedures	Demographic and clinical data, inlet flow rate, TBV processed, procedure time	No adverse events reported. Midline catheters were safe and effective.
Marche et al., 2023	To evaluate midline catheters for extracorporeal photopheresis in GVHD patients.	Single-center prospective preliminary study	6 patients, 69 procedures	Outflow rate, catheter size, procedure time, complications	Procedures were completed successfully without catheter-related complications. 5Fr catheters provided higher flow rates and shorter procedure times.

Abbreviations: PVK, peripheral venous catheter; HSC, hematopoietic stem cell; IEC, immune effector cell; SVK, central venous catheter; HPC, hematopoietic progenitor cell; PICC, peripherally inserted central catheter; GVHD, graft-versus-host disease; ECP, extracorporeal photopheresis.



RESULTS

This systematic review includes 8 studies that met the inclusion criteria. The author, year, study design, sample size, measurement tools, and findings of the studies are summarized in Table 1.

Three of the studies had an observational design; two were prospective, and four were retrospective; one was a randomized controlled trial, and one was a comparative experimental study. The included studies involved 169 patients and 446 TA procedures, encompassing both pediatric and adult patient groups. The studies evaluated the efficacy and safety of various vascular access methods used in TA procedures. In this context, blood flow rate, procedure duration, cell collection efficiency, and catheter-related complications were examined as primary outcomes.

When reviewing studies evaluating vascular access methods in TA procedures, one study assessed the use of peripheral venous catheters (8), one study compared intravenous catheters of different diameters and characteristics (9), one study compared central venous catheter types (10), four studies examined midline catheter use (11-14), and one study evaluated the use of PICC catheters (15). In all studies, the efficacy and safety of catheter types used in apheresis procedures were evaluated based on blood flow rate, procedure duration, cell collection efficiency, and catheter-related complications. Additionally, some studies compared different catheter diameters and insertion techniques.

Regarding catheter duration and application characteristics in TA procedures, it was observed that these vary depending on procedure duration and clinical requirements. While catheters were mostly used during single-session apheresis procedures, in some studies they were left in place for days to weeks and used in multiple procedures (11,12,15). Furthermore, some studies reported that catheters were used exclusively for apheresis procedures, whereas others indicated their use for both apheresis and infusion of stem cells or intravenous therapies. The duration and method of catheter use vary depending on catheter type, patient clinical condition, and treatment protocol.

In a randomized non-inferiority study conducted by Armendariz et al. (9), patients were divided into two groups: one using a 20G fenestrated catheter and the other an 18G standard catheter. Catheter performance was evaluated based on insertion flow rate, backpressure, processed blood volume, and procedure duration, and no statistically significant differences were found between the two catheter types ($p > 0.05$). These results support that smaller-gauge catheters are an effective and safe alternative in TA procedures (9).

In the study by Doberschuetz et al. (10), the efficacy of using a pre-placed Hickman catheter for chemotherapy versus a temporarily placed central venous catheter (Shaldon) for apheresis was compared, and no statistically significant differences were observed between the groups in terms of the number of CD34+ cells collected and collection efficiency ($p > 0.05$). It was reported that the procedure was successful with both catheter types, and no significant complications were observed. Additionally, the target CD34+ cell level was achieved in all patients within a maximum of two apheresis sessions. These results indicate that different types of central venous catheters have similar efficacy and safety profiles in TA procedures (10).

In the study by Geile et al. (11), the safety and efficacy of midline catheter use for apheresis in pediatric patients were evaluated. Blood flow rates achieved with the midline catheter significantly exceeded the recommended levels for pediatric apheresis (≥ 40 mL/min; $p < 0.0001$). Only one case of catheter-related thrombosis was reported, while no catheter-related bloodstream infections or catheter dislodgements were observed. These findings support the use of midline catheters as a safe and effective vascular access method in pediatric apheresis procedures (11).

In the study by Kremer et al. (15), the safety and feasibility of using high-flow PICC catheters for apheresis and infusion procedures in pediatric patients were evaluated. The study demonstrated that high-flow PICC catheters enabled successful stem cell collection in all patients by providing adequate blood flow. Furthermore, no serious complications such as thrombosis or catheter-related bloodstream infections were observed. Notably, the same catheter could be used for both apheresis and infusion procedures, reducing the need for additional interventions, improving patient comfort, and minimizing procedure-related risks. These findings support the use of PICC catheters as a safe and effective alternative in therapeutic apheresis applications (15).

DISCUSSION

Ensuring adequate and safe vascular access during TA procedures is a key determinant of procedural success and patient safety (16). Depending on the catheter type used, blood flow rate, procedure duration, and

complication risk may vary (4,17). Studies report that catheter-related infections, thrombosis, and mechanical complications can negatively affect the apheresis process and reduce patient comfort (18). Therefore, selecting an appropriate vascular access method and managing catheters effectively are critical in TA applications (3).

Results from the included studies indicate that peripheral venous catheters, midline catheters, and PICC lines can be used as alternatives to central venous catheters in selected clinical situations with appropriate patient selection (5,11–15). It is particularly noteworthy that midline and PICC catheters can provide adequate blood flow rates and are associated with low complication rates (11,13–15). These findings offer clinically significant advantages by reducing the need for invasive central venous catheterization, anesthesia requirements, and catheter-related complications. Additionally, the use of alternative vascular access methods, particularly in patients with difficult vascular access, can improve procedural continuity and prevent interruptions in treatment.

However, some studies have reported that similar procedural success and clinical outcomes can be achieved with peripheral venous catheters (8,9). It has been suggested that smaller-caliber catheters may reduce vascular trauma, lower the risk of infiltration and phlebitis, and improve patient comfort while maintaining efficacy comparable to standard catheters (9). This provides a significant clinical advantage, particularly in pediatric, elderly, and patients with limited peripheral vascular access. However, careful patient selection and experienced clinical teams are essential to preserve vascular integrity and maintain adequate blood flow.

Regarding catheter duration and application characteristics, it was observed that catheter duration varies depending on procedure type, treatment protocol, and patient clinical condition (11–13,15–17). Some studies reported that catheters were used only during a single apheresis session, while others indicated prolonged use for days or weeks and repeated procedures (11,13,15). In particular, the use of PICC catheters for both apheresis and infusion procedures reduces the number of vascular access interventions, thereby improving patient comfort and supporting continuity of care. Furthermore, strict adherence to infection control protocols is essential during long-term catheter use.

One of the key findings of this review is the critical role of nursing care in catheter management. Appropriate catheter selection, aseptic insertion, adherence to standardized care protocols, regular monitoring, and early detection of complications are essential components of patient safety (4,11,13,15). Nursing care is particularly important in preventing catheter-related bloodstream infections, reducing thrombosis risk, and identifying mechanical complications early. In this context, strengthening nurses' competencies in vascular access management can improve clinical outcomes.

Limitations of the Study

This systematic review included studies evaluated by two external experts and one researcher and covered publications from the past 10 years, with the use of different catheter brands in TA procedures representing additional limitations. However, most included studies had small sample sizes and observational designs, which limits the generalizability of the findings. Moreover, heterogeneity among studies regarding catheter types, application protocols, and outcome measures makes direct comparison challenging.

CONCLUSIONS AND RECOMMENDATIONS

Individualized decision-making for catheter selection and use in TA procedures is essential, taking into account patient characteristics and treatment requirements. Catheter management in TA is not merely a technical procedure but a process directly related to the quality of nursing care. Therefore, improving nurses' clinical competencies, strengthening care standards, and promoting evidence-based practices will significantly enhance patient outcomes. To more robustly demonstrate the efficacy and safety of vascular access methods in TA, further randomized controlled trials with standardized protocols, larger sample sizes, and high methodological quality are needed.

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Psychosocial Challenges Experienced by Prostate Cancer Patients Receiving Androgen Deprivation Therapy: A Qualitative Study

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Objective: This study explored the experiences of patients diagnosed with prostate cancer who were receiving Androgen Deprivation Therapy (ADT) regarding psychosocial risks.

Materials-Methods: This study was conducted using a qualitative research design. Data were collected between November 2025 and February 2026 through individual semi-structured interviews with 15 patients diagnosed with prostate cancer. Thematic analysis was performed using Braun and Clarke's six-phase framework, and the study was reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist.

Results: Following the thematic analysis, six main themes and 18 subthemes were identified. The main themes were continuing treatment despite difficulties, treatment-related psychological, social, and physical problems, loss of sexuality, and patients' expectations and recommendations.

Conclusion(s): It was concluded that patients with prostate cancer experienced burnout, depressive symptoms, social restrictions, and emotional changes related to ADT. Patients emphasized that they experienced physical problems due to both the disease and treatment processes, and that the treatment led to a sense of loss in their sexual lives. It was also determined that patients had needs related to psychosocial support, comfort in physical care environments, and supportive care for their sexual lives.

Clinical implications: Strengthening core clinical competencies for cancer care, such as effective communication, psychosocial support, and medication management, is of great importance for ensuring symptom control and sustaining holistic care through multidisciplinary collaboration among healthcare professionals. In this context, effective and coordinated teamwork between oncologists and psychiatric nurses may enable the simultaneous addressing of patients' physical, psychological, and social needs, thereby contributing to the prevention of psychosocial problems that may arise during the treatment process.

Keywords: Androgen deprivation treatment, prostate cancer, psychosocial challenges, mental health

OP - 025

The Relationship Between Symptom Burden and Cancer Information Overload in Hematological Cancer Patients Receiving Chemotherapy

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Objective: This study aimed to examine the relationship between symptoms experienced by hematological cancer patients receiving chemotherapy and cancer-related information overload.

Materials-Methods: This descriptive, cross-sectional study included 150 hematological cancer patients receiving outpatient chemotherapy at a university hospital. Patients who had received at least one cycle of chemotherapy and agreed to participate were included. Data were collected using a Patient Information Form, the Rotterdam Symptom Checklist (RSCL), and the Cancer Information Overload Scale. Descriptive statistics were used. Independent samples t-test and one-way ANOVA were applied for group comparisons, with post-hoc tests for significant differences. Relationships between variables were analyzed using Pearson correlation. Statistical significance was set at $p < 0.05$.

Results: Most physical and psychological symptoms were reported as "not at all," with a mean rate of $87.11 \pm 11.97\%$. Hair loss was the most prominent symptom, reported as "very much" by 23.3% of patients. A considerable proportion of participants experienced information overload. Specifically, 36.0% "strongly agreed" and 24.0% "agreed" that they did not know which recommendations to follow for cancer prevention. A low but statistically significant positive correlation was found between information overload and psychological symptoms ($r = 0.179$; $p = 0.028$), as well as total RSCL scores ($r = 0.201$; $p = 0.014$).

Conclusion(s): Information overload is associated with psychological symptoms in hematological cancer patients. Personalized information and nurse-led education, including digital guidance, may reduce overload and improve symptom management.

Keywords: Hematological cancer, cancer information overload, chemotherapy, symptom management



OP - 026

Global Trends in Nursing Research on Preferred Place of Death: A Bibliometric Analysis

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Objective: Preferences for the place of death are an important factor influencing the quality of care individuals receive at the end of life. These preferences are associated with cultural, socioeconomic, and personal factors. Nursing practice plays an important role in providing care that respects and supports these preferences. This study aimed to examine global research trends on preferences for place of death in the nursing field using bibliometric methods.

Materials-Methods: A total of 1,499 publications indexed in the Web of Science Core Collection between 1981 and 2024 and meeting the inclusion criteria were included in the bibliometric analysis. The literature search was conducted using the keywords "place of death," "preferred place of death," and "nursing." The data were analysed using the bibliometrix package. Performance analysis, keyword analysis, thematic mapping, and collaboration network analysis were conducted. The data were filtered and visualised in accordance with PRISMA guidelines.

Results: A significant increase in the number of publications has been observed in the literature since 2000. The main themes in the literature include palliative care, home death, and quality of life. Among the most productive authors are Delien L and Higginson IJ. The journal with the greatest influence in this field is Palliative Medicine. Collaboration analysis shows that the United Kingdom and the United States play a central role in international research networks.

Conclusion(s): Publications on preferences for place of death in the field of nursing have steadily increased over recent decades. Research in this area has largely focused on palliative care, care settings, and patient preferences. This trend reflects growing interest in end-of-life care and patient-centered decision-making. The findings of this study may provide guidance for future research. In addition, identifying individuals' preferences regarding place of death may contribute to improving approaches aimed at enhancing the quality of end-of-life care.

Keywords: bibliometric analysis, nursing, palliative care, place of death

OP - 027

Expectations and Experiences of Yoga in Women with Breast Cancer Using Endocrine Therapy: A Qualitative Study

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Objective: Breast cancer is the most common cancer among women worldwide. Although adjuvant endocrine therapy reduces recurrence risk and improves survival, treatment-related side effects can negatively affect adherence. Yoga is recommended in integrative oncology for symptom management. This study explored the expectations and experiences of women with breast cancer participating in a yoga program during the early phase of endocrine therapy.

Materials-Methods: This study employed a qualitative design. Participants were selected through purposive sampling from women with breast cancer who completed a 6-week online group yoga program during the early phase of endocrine therapy. Individual semi-structured interviews were conducted online with 17 women (n=17), each lasting approximately 40 min. Data were analyzed using Interpretative Phenomenological Analysis.

Results: Four experiential themes were developed: Theme 1— Reclaiming Agency within a Medically Structured Life: Yoga was experienced as a personally owned act of self-care within a medically structured daily life. Women positioned yoga not as an alternative to treatment but within it: "At least I felt I was doing something for myself."(P8) Theme 2— Creating Safety in Vulnerability: The instructor's nursing background and clinical expertise, combined with the home-based online format, co-constructed a safe space. The group structure transformed bodily limitation from individual failure into shared experience. Theme 3— Re-inhabiting the Altered Body: "After my mastectomy, I could not lift my arm... when I started medication, my movements became even more restricted. Now, thanks to yoga, I can move much more comfortably."(P9) Symptoms were managed through relational transformation rather than elimination; breathing techniques carried into daily life signaled yoga's evolution into an embodied self-care resource. Theme 4— Negotiating Self-Care under Ongoing Uncertainty: Sustainability was disrupted by gendered structural burdens, not lack of motivation: "The door can open at any moment."(P14) Difficulty distinguishing yoga-induced from medication-related pain was an additional source of anxiety.

Conclusion(s): Yoga helped women reconnect with their bodies, enhance self-confidence, and strengthen self-care during early endocrine therapy. While it did not eliminate symptoms, it provided relief and improved well-being. The nurse-led digital group format increased accessibility and belonging. These findings suggest that yoga-based interventions can be integrated into oncology nursing as a culturally sensitive supportive care approach.

Keywords: Breast neoplasms, endocrine therapy, nursing, qualitative research, yoga



OP - 028

Turkish Adaptation of the Oncology Nursing Communication Skills Scale in the Initial Consultation After a Cancer Diagnosis: A Validity and Reliability Study

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Objective: A cancer diagnosis causes significant psychosocial distress for patients and their families, making effective therapeutic communication by oncology nurses essential. However, there is a lack of instruments to assess nurses' communication skills during the initial consultation after diagnosis. This study aims to adapt a communication skills scale into Turkish and evaluate its validity and reliability.

Materials-Methods: This methodological study follows ISPOR guidelines for cross-cultural adaptation. The adaptation process included forward and backward translation, reconciliation, and expert review. Content validity was evaluated by 10 experts using the Davis technique, yielding an S-CVI/Ave of 0.96, with all I-CVI values exceeding 0.80. The study is currently in the pilot testing phase to assess comprehensibility among oncology nurses. For the main study, a minimum sample of 319 nurses is planned for the 29-item scale, based on the recommendation of at least 10 participants per item.

Results: Descriptive statistics will be used to summarize the data. Construct validity will be examined using exploratory and confirmatory factor analyses, and sample adequacy will be assessed with KMO and Bartlett's test. Internal consistency will be evaluated using Cronbach's alpha, item-total correlations with Pearson analysis, and temporal stability through test-retest reliability.

Results: Content validity findings indicate a high level of content validity. The pilot phase is ongoing, and the final version of the scale will be established accordingly.

Conclusion(s): The Turkish version of this scale is expected to be a valid and reliable tool, contributing to the literature as a standardized instrument for clinical practice and research.

Keywords: Oncology nursing, therapeutic communication, communication skills, scale adaptation

OP - 029

Assessment of Treatment Decision Regret and Associated Factors Among Patients With Cancer

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Objective: Cancer treatment decisions may lead to uncertainty and subsequent regret in some patients. This study aimed to evaluate treatment decision regret among patients with cancer and to identify factors associated with decision regret.

Materials-Methods: This descriptive and correlational cross-sectional study was conducted with 286 patients diagnosed with cancer who were receiving treatment at the oncology clinics of a tertiary care hospital between January 2025 and June 2025. Data were collected using a Sociodemographic Information Form and the Decision Regret Scale (DRS). The DRS is a five-item instrument designed to assess regret related to healthcare decisions, with higher scores indicating greater levels of regret. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki, and ethical approval was obtained from the relevant institutional ethics committee prior to data collection. Data were analyzed using descriptive statistics, independent-samples t-tests, one-way ANOVA, Pearson correlation analysis, and multiple linear regression analysis. Statistical significance was accepted at $p < 0.05$.

Results: The mean age of the participants was 53.8 ± 12.9 years, and 55.6% were female. The mean Decision Regret Scale score was 27.9 ± 15.7 , indicating a moderate level of treatment decision regret among patients. Significant differences in regret scores were observed according to education level and perceived adequacy of information regarding treatment options. Patients with lower educational attainment reported significantly higher decision regret scores ($p = 0.004$). Additionally, patients who stated that they had not received sufficient information about their treatment options had markedly higher regret scores compared with those who reported adequate information (32.6 ± 16.1 vs. 23.4 ± 13.9 , $p < 0.001$). Multiple linear regression analysis demonstrated that perceived adequacy of information ($\beta = -0.34$, $p < 0.001$) and level of patient participation in treatment decision-making ($\beta = -0.29$, $p = 0.002$) were significant predictors of treatment decision regret, explaining approximately 31% of the variance in regret scores.

Conclusion(s): The findings suggest that treatment decision regret is a relevant psychosocial issue among patients with cancer. Insufficient information and limited patient involvement in the decision-making process appear to increase the likelihood of regret after treatment decisions. Oncology nurses play a crucial role in supporting patients during the treatment decision process by providing clear information and facilitating shared decision-making. Improving patient participation and communication in oncology care may help reduce treatment decision regret and enhance patient-centered outcomes.

Keywords: Cancer patients, decision regret, treatment decision-making



OP - 030

A Story of Experience and Empathy: How Simulated Nursing Students Live with a Stoma ?

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Objective: The purpose of this study was to examine the impact of training provided on stoma care instruction. This study was conducted to investigate how the experience simulated nursing students had during the training process affected their ability to provide stoma care and their level of empathy.

Materials-Methods: The study employed a qualitative descriptive design and guided content analysis to examine nursing students' experiences in depth. The study included 12 first-year students, all aged 18 or older, who were enrolled at Balıkesir University, had recently completed their ostomy care training, and were entering clinical practice for the first time. To avoid disrupting the participants' course schedules, the study was conducted concurrently with their clinical practice. The students were asked to wear stoma bags containing 100 ml of a flour mixture and live with these bags for 24 hours. During this process, they were required to adhere to a special diet designed to prevent diarrhea, constipation, and gas formation. At the end of the study period, the students' feelings and thoughts were documented through structured interview questions, and key themes were identified from the collected data.

Results: Based on the data collected, all nursing students reported positive experiences regarding the stoma care training day, and no negative comments were made. They stated that it was a valuable experience that allowed them to empathize with patients and understand the challenges of living with a stoma, and that they would never forget the experience they had while caring for these patients. Some noted that deviating from their usual dietary habits was financially burdensome and that they tried to conceal the stoma for the sake of their body image.

Conclusion(s): Nursing students emphasized that relying solely on checklists is insufficient when providing care to patients they may encounter for the first time in a clinical setting, and that learning through experience is crucial in patient care. They felt and expressed that they needed to strengthen their approach to care by incorporating the concepts of empathy and understanding the patient.

Keywords: Empathy, nursing students, simulation, stoma care



OP - 031

Perceived Preparedness for Psychosocial Care Among Nursing Students: A Mixed-Methods Study of a Simulation-Based Educational Intervention

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Objective: Psychosocial care is a fundamental component of holistic nursing practice; however, undergraduate nursing education often provides limited opportunities for students to develop skills in recognizing and addressing psychosocial needs in individuals with physical illness. Simulation-based education may provide a structured, safe learning environment to support the development of these competencies.

This study aimed to evaluate nursing students' perceptions of learning effectiveness and perceived preparedness, and to explore their experiences following a simulation-based educational intervention designed to support psychosocial care skills.

Materials-Methods: A mixed-methods study with a concurrent triangulation design was conducted among senior nursing students enrolled in a Mental Health and Psychiatric Nursing course. A total of 68 students participated in the quantitative phase, and 15 students were included in focus group interviews. The content of the training initiative focused on Consultation-Liaison Psychiatric Nursing consisted of theoretical instruction, practical activities, and simulation exercises conducted with standardized patients. Quantitative data were collected using the Simulation Effectiveness Tool-Modified (SET-M), while qualitative data were obtained through focus group discussions using semi-structured interview questions. Quantitative and qualitative data were analyzed separately and integrated during interpretation.

Results: Students reported high levels of perceived learning effectiveness across all SET-M subdimensions, with particularly high scores in debriefing and confidence. Qualitative findings revealed three main themes: awareness of psychosocial care, perceived ability to provide psychosocial care, and preparation for the clinical practice environment. Students emphasized the role of simulation and debriefing in supporting reflection, understanding, and perceived preparedness for clinical practice.

Conclusion(s): The simulation-based educational intervention was well received by nursing students and appeared to support their awareness of psychosocial care and their perceived preparedness for clinical practice. These findings suggest that simulation-based learning may be a useful educational strategy for integrating psychosocial care into undergraduate nursing curricula. Further research using objective outcome measures and longitudinal designs is recommended.

Keywords: mixed methods study, nursing students, psychosocial care, simulation, nursing education



OP - 032

Financial Toxicity and Psychological Distress Among Patients Receiving Chemotherapy

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Objective: Financial toxicity, defined as the economic burden associated with cancer treatment, may affect both patients' financial status and psychological well-being. This study aimed to evaluate financial toxicity among patients receiving chemotherapy and to examine its relationship with psychological distress, particularly anxiety and depression.

Materials-Methods: This descriptive and correlational cross-sectional study was carried out with 312 adult patients undergoing chemotherapy in the oncology clinic of a tertiary-level hospital. Data were collected between March and August 2025 using three instruments: a Sociodemographic Information Form, the Comprehensive Score for Financial Toxicity (COST), and the Hospital Anxiety and Depression Scale (HADS). Psychological distress was assessed using the anxiety and depression subscales of the HADS. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki, and ethical approval was obtained from the relevant institutional ethics committee prior to data collection. Data were analyzed using descriptive statistics, Pearson correlation analysis, independent-samples t-tests, one-way ANOVA, and multiple linear regression analysis. Statistical significance was set at $p < 0.05$.

Results: The mean age of the participants was 52.6 ± 13.8 years, and 58.7% of the sample consisted of female patients. The average COST score was 18.4 ± 7.6 , suggesting a moderate level of financial burden related to cancer treatment. The mean scores for anxiety and depression were 9.1 ± 4.2 and 8.7 ± 4.0 , respectively. Correlation analysis demonstrated a statistically significant negative relationship between financial toxicity and psychological distress. Lower COST scores, reflecting greater financial burden, were associated with higher levels of both anxiety ($r = -0.41$, $p < 0.001$) and depression ($r = -0.45$, $p < 0.001$). Additionally, patients with lower income levels and those who were not actively employed reported significantly greater financial toxicity ($p < 0.01$). In the multiple linear regression model, financial toxicity remained a significant predictor of psychological distress after controlling for sociodemographic factors such as age, gender, and income level ($\beta = -0.38$, $p < 0.001$).

Conclusion(s): Financial challenges associated with cancer treatment were found to be significantly related to higher levels of psychological distress among patients receiving chemotherapy. Economic burden may exacerbate anxiety and depressive symptoms, adversely affecting patients' overall well-being. Oncology nurses play a critical role in identifying patients experiencing financial difficulties and facilitating access to financial counseling and psychosocial support. Integrating the management of financial toxicity into comprehensive cancer care may improve psychological outcomes and strengthen patient-centered oncology practice.

Keywords: Chemotherapy, cancer patients, financial toxicity, psychological distress

OP - 033

The Relationship Between Supportive Care Needs and Caregiver Burden in Individuals Caring for Patients with Cancer

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Objective: Individuals caring for patients with cancer may experience various physical, psychological, and social challenges during the caregiving process, which can increase caregiver burden. Identifying unmet supportive care needs of caregivers is important for planning interventions to reduce caregiver burden. This study aimed to examine the relationship between supportive care needs and caregiver burden among individuals caring for patients with cancer.

Materials-Methods: This descriptive and cross-sectional study was conducted with caregivers of patients receiving outpatient chemotherapy (n=171). Data were collected using a Descriptive Information Form, Supportive Care Needs Survey for Partners and Caregivers, and Caregiver Strain Index. Data were analyzed using descriptive statistics, independent samples t-test, Pearson correlation analysis, and hierarchical regression analysis.

Result: The mean caregiver burden score was 3.02±3.62. It was found that 17.5% of caregivers had a high level of burden. Significant positive correlations were observed between all subdimensions of supportive care needs and caregiver burden ($p<0.001$). The strongest correlation was found in the work and social needs domain ($r=0.485$). Caregivers with high burden had significantly higher scores in all supportive care need domains ($p<0.001$). Hierarchical regression analysis revealed that the model explained 29.6% of the variance. In the final model, unmet supportive care needs ($\beta=0.382$, $p<0.001$) and the patient's general health status ($\beta=0.278$, $p<0.001$) were identified as significant independent predictors of caregiver burden.

Conclusion(s): The findings indicate that unmet supportive care needs are the strongest determinant of caregiver burden among individuals caring for patients with cancer. Early identification of caregivers' needs and development of appropriate support programs may contribute to reducing caregiver burden.

Keywords: cancer, caregiver, caregiver burden, chemotherapy, supportive care needs



OP - 034

The Relationship Between Symptoms Experienced by Patients Receiving Chemotherapy Treatment and Cyberchondria

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Objective: Patients receiving chemotherapy treatment experience many symptoms. These symptoms can affect online information seeking. The aim of this study is to determine the relationship between symptoms experienced by patients receiving chemotherapy treatment and cyberchondria.

Materials-Methods: The research was conducted as a descriptive cross-sectional study with 108 patients receiving outpatient chemotherapy treatment. Data were obtained using the "Patient Information Form", "Cyberchondria Severity Scale" and the "Edmonton Symptom Assessment Scale". Statistical analyses were performed using the Mann-Whitney U test, Kruskal-Wallis test, and Spearman correlation analysis. The statistical significance level was accepted as $p < 0.05$.

Results: It was determined that 55.56% of the patients were female, the mean age was 60.74 ± 12.74 years, and the time spent on the internet was 141.06 ± 150.66 minutes. The mean total scores of the Edmonton Symptom Assessment Scale and the Cyberchondria Severity Scale were determined to be 38.28 ± 24.62 and 58.19 ± 20.78 , respectively. The two most frequently reported symptoms by the patients were fatigue (4.59 ± 3.39) and pain (4.04 ± 3.76). A low-level negative and statistically significant correlation was found between the Edmonton Symptom Assessment Scale (ESAS) and the Cyberchondria Severity Scale (CSSS) ($p < 0.05$). A statistically significant positive correlation was found between the amount of time patients spent online daily and their level of cyberchondria, and a statistically significant negative correlation with age ($p < 0.05$).

Conclusion(s): The most frequently experienced symptoms by patients were fatigue and pain. It is recommended that nurses focus on symptom management. Patients had low to moderate levels of cyberchondria. Nurses should evaluate patients' information sources and direct them to reliable sources.

Keywords: Chemotherapy, cyberchondria, symptom



OP - 035

The effect of local heat and cold application on the management of chemotherapy-induced peripheral neuropathy in breast cancer patients: a randomized controlled trial

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Objective: Chemotherapy agents commonly used in the treatment of breast cancer can lead to side effects such as peripheral neuropathy, which negatively affect quality of life. Peripheral neuropathy limits patients' daily functioning and makes adherence to treatment more difficult. This study aims to determine the effect of local hot and cold applications on chemotherapy-induced peripheral neuropathic symptoms.

Materials-Methods: This randomized controlled study was conducted with 96 breast cancer patients who developed peripheral neuropathy during the chemotherapy process. Participants were randomized into three groups: a hot application group, a cold application group, and a control group. The interventions were applied according to a predetermined protocol throughout the chemotherapy cycles.

Results: According to the study findings, a statistically significant reduction in peripheral neuropathic symptoms was observed in the hot application group ($p<0.05$). In particular, notable improvements were seen in symptoms such as numbness in the toes, finger discomfort, sensitivity to cold, and difficulty in performing exercise. Some sensory symptoms also showed significant improvement in the cold application group; however, the magnitude of the effect was more limited compared to the hot application. In the control group, an increase in the severity of many symptoms was observed.

Conclusion(s): This study demonstrates that local hot application is an effective non-pharmacological method for reducing chemotherapy-induced peripheral neuropathy symptoms. Cold application, on the other hand, provided limited benefit in certain symptoms. Our findings suggest that hot application can be integrated into nursing care and used as a supportive intervention in the management of neuropathy.

Keywords: Breast cancer, chemotherapy, peripheral neuropathy, heat application, cold application



OP - 036

Breast cancer screening among mothers of children with disabilities: outcomes of an educational intervention

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Objective: Mothers raising children with disabilities often face time constraints, financial difficulties, and psychosocial stress due to caregiving responsibilities. These challenges limit access to preventive health services and contribute to health inequalities, reducing participation in breast cancer screening. This study aimed to conduct breast cancer screenings among mothers raising children with disabilities, to evaluate their knowledge, attitudes, and behaviors regarding screening, and to determine the impact of a planned educational intervention.

Materials-Methods: A one-group pretest–posttest intervention was conducted with 83 mothers whose children were enrolled in a disability care center in Istanbul, Türkiye. Data were collected between April and December 2023. The intervention included clinical breast examination, mammography referral when indicated, and structured education on breast cancer screening and breast self-examination. Knowledge and attitudes were assessed before the intervention and three months later.

Results: Screening behaviors were inadequate, similar to the general population. Of the two women referred for suspicious breast masses, one was diagnosed with invasive cancer. Three months after the intervention, mean BCS knowledge scores increased from 4.0 ± 1.9 to 8.9 ± 1.9 ($p < 0.001$), and mean BSE knowledge scores from 0.6 ± 1.3 to 8.3 ± 1.8 ($p < 0.001$). Attitude scores did not change significantly ($p > 0.05$).

Conclusion(s): Mothers of children with disabilities represent a disadvantaged group with limited BCS participation. Targeted educational interventions can substantially improve knowledge and self-examination practices. Incorporating such programs into disability care services may reduce inequalities and promote early detection in this underserved population.

Keywords: breast cancer, screening, disadvantaged women, knowledge, attitudes



OP - 037

The Impact of Perroca Patient Classification System-Based Nurse Planning on Nurse Outcomes in Oncology Units of an University Hospital

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Objective: The Perroca Patient Classification System determines nursing requirements by taking into account patients' levels of dependency. This system optimizes nurses' workload, increases nurse satisfaction. Integrating patient classification systems into nurse planning policies will contribute to management by improving nurse outcomes. The aim of this study is to examine the effect of nurse planning based on the Perroca Patient Classification System on nurse satisfaction in the oncology units of a university hospital.

Materials-Methods: The study was conducted using a cross-sectional and quasi-experimental research design in the Hematology, Oncology, and Bone Marrow Transplantation (BMT) clinics of a university hospital. The sample consisted of 37 nurses working in three oncology units with a total bed capacity of 54. Nurse satisfaction was evaluated before and after nurse staffing based on the Perroca Patient Classification System. A single question with 10 points from one to ten was preferred to evaluate nurse satisfaction. The data of the study were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation), the Shapiro-Wilk test, and the Wilcoxon Signed-Rank test, with a significance level set at $p < .05$.

Results: Before the nurse planning based on the Perroca Patient Classification System (May 2021), the total number of nurses was 37, but after the planning, the number of nurses became 43. The mean age of the participating nurses was 27.9 ± 4.9 years. Of the nurses, 94.6% were female, and 67.6% held a bachelor's degree. Additionally, 78.4% had 0–4 years of professional experience, and 91.9% had 0–4 years of experience in their current unit. Nearly half of the nurses (48.6%) worked in the hematology unit, and 24.3% possessed at least one nursing certification. Nurse satisfaction scores increased from 4.57 ± 1.10 before planning to 7.59 ± 1.34 after planning; this difference was found to be statistically significant ($p < .000$).

Conclusion(s): It was found that nurse planning based on the Perroca Patient Classification System improved nurse satisfaction. Nurse staffing based on patient classification systems is considered to have the potential to improve nurse satisfaction; therefore, it is recommended that this approach be implemented in oncology units and expanded to other clinical settings.

Keywords: Oncology, nurse, satisfaction, nurse satisfaction, nurse manager

OP - 038

Examination of Nursing Graduate Theses in The Field of Radiation Oncology: A Systematic Analysis

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Objective: This study systematically examines nursing graduate theses in radiation oncology in Türkiye to reveal research trends, topic distributions, methods, and contributions to nursing practice.

Materials-Methods: A descriptive survey method was used. The YÖK National Thesis Center database was searched using the keywords radiotherapy, radiation oncology, and nursing, covering theses from 2004–2025. Theses were analyzed by year, type, university, research method, subject area, sample size, scales used, and main findings.

Results: A total of 20 graduate theses were included; 13 (65%) were master's theses and 7 (35%) doctoral dissertations. Approximately 60% were produced between 2019–2025. Descriptive-cross-sectional designs predominated (n=16), with limited randomized controlled trials (n=2) and qualitative studies (n=2). Frequently studied topics included symptom management (fatigue, sleep quality, oral mucositis, nutrition), quality of life, patient/caregiver burden, nursing interventions (navigation, exercise training, comfort-enhancing care), and psychosocial support. Three theses (15%) involved caregivers and one (5%) involved nurses; one study focused on caregivers of pediatric patients, while 19 (95%) involved adult oncology patients. Head and neck and breast cancers were the most studied cancer types. Sample sizes ranged from 27 to 345. Experimental studies showed that nurse navigation, patient education, and Kegel exercise interventions effectively improved symptom management, quality of life, and treatment adherence. Descriptive studies found that caregivers' knowledge levels, perceived comfort, unmet needs, and job satisfaction were significantly associated with patient and caregiver outcomes. Qualitative studies revealed that radiotherapy is a complex experience encompassing physical, psychosocial, and existential dimensions, with nursing support playing a critical role.

Conclusion(s): Graduate research in radiotherapy nursing in Türkiye has accelerated in recent years. Nevertheless, the limited number of randomized controlled trials, insufficient longitudinal follow-up studies, and underrepresentation of topics such as radiation dermatitis, sexual health, and spiritual care are notable gaps. Increasing experimental and multicenter studies and developing nurse specialization programs in this field are recommended to strengthen evidence-based radiotherapy nursing practice.

Keywords: Radiotherapy, graduate thesis, systematic review, evidence-based nursing, oncology nursing.



OP - 039

Oncology nursing in the Czech Republic

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Objective: This study aims to identify perceived strengths, weaknesses, opportunities, and threats related to the future of oncology nursing from the perspective of general nurses.

Materials-Methods: SWOT analysis

Results: The SWOT analysis revealed that the perceived strengths of oncology nursing include a high level of professional expertise, a holistic approach to patient care, and a strong role in patient education and symptom management. Identified weaknesses were staff shortages, a high psychological burden, increased administrative workload, and limited opportunities for career development. Opportunities were associated with the expansion of specialized education, the development of advanced nursing roles, increased involvement in evidence-based practice, and the use of digital technologies in patient care. Major threats included workforce aging, rising incidence of cancer, persistent understaffing, and insufficient systemic support for nurses' well-being.

Conclusion(s): The results emphasize the importance of addressing workforce challenges and supporting professional development to sustain the future of oncology nursing.

Keywords: Oncology nursing, future of nursing, SWOT analysis, professional development, cancer care

OP - 040

Peripheral Intravenous Catheter Complications and Determinants in Oncology Patients: A Prospective Study

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Objective: Intravenous catheters are widely used in oncology care for administering chemotherapy, fluids, nutrition, and blood products, but they are associated with various complications, especially during prolonged use. This study aimed to determine the frequency of intravenous catheter-related complications in hospitalized oncology patients and to identify associated risk factors.

Materials-Methods: This study was conducted as a prospective descriptive study. The data were collected prospectively from 113 patients hospitalized in the oncology ward between August 2025 and January 2026. Ethical approval was obtained from the Koç University Biomedical Research Ethics Committee (Approval No: 2025.326.IRB2.150), and institutional permission was also secured. Data collection was carried out using patient visits, nursing observation forms, patient records, and electronic health records.

Results: The most common catheter-related complications were obstruction (34.5%), pain (30.1%), erythema (29.2%), and extravasation (28.3%), followed by dislodgement (22.1%) and phlebitis (13.3%). Extravasation was significantly more frequent in patients receiving targeted therapy ($p = 0.020$). Catheter dislodgement was associated with older age ($p = 0.006$), better performance status ($p = 0.048$), less experienced nurses performing catheter insertion ($p = 0.033$), reinsertion at the same site ($p = 0.032$), and the presence of metastasis ($p = 0.049$). Catheter occlusion was significantly more common among patients receiving non-chemotherapy irritant medications ($p = 0.018$).

Conclusion(s): The findings of this study highlight the need for a multifaceted approach to prevent catheter-related complications. Standardization of catheter insertion and maintenance practices is recommended to improve patient safety and clinical outcomes.

Keywords: Peripheral catheter, oncology, chemotherapy, complications

INTRODUCTION

Intravenous catheters are essential tools in the treatment process of oncology patients, enabling the administration of multiple interventions such as chemotherapy, fluid therapy, parenteral nutrition, and blood product transfusions. Among these, peripheral intravenous catheters (PIVCs) are the most commonly used. PIVCs are typically inserted into the superficial veins of the hand and forearm, although they may also be used in varying lengths to access deeper peripheral veins. They are considered a rapid, easily applicable, and cost-effective method for vascular access (1) and are used at least once in approximately 60% of hospitalized patients (2). However, these catheters are associated with significant risks of complications, particularly during prolonged use. The most frequently reported catheter-related complications include infections, occlusion, thrombosis, extravasation, and phlebitis (3,4). These complications may disrupt the treatment process, prolong hospital stay, increase healthcare costs, and even lead to mortality (5). This study aimed to determine the incidence of complications associated with intravenous catheters in hospitalized oncology patients, analyze potential risk factors contributing to these complications, and systematically classify the observed complications.

Research Questions

1. What are the most common intravenous catheter-related complications in hospitalized oncology patients?
2. Which patient- and treatment-related factors influence the development of catheter-related complications?

METHODS

This study was conducted as a prospective descriptive study. Data were collected from 113 patients hospitalized in the oncology ward between August 2025 and January 2026. All patients with intravenous catheters were monitored for catheter-related complications throughout their hospital stay. Patient follow-up continued until discharge. All patients who met the inclusion criteria were included in the study. Ethical approval was obtained from the Koç University Biomedical Research Ethics Committee (2025.326.IRB2.150) and institutional permission from the hospital. Data were collected prospectively.

Data collection was performed using patient visits, nursing observation forms, patient records, and electronic health records. Data regarding patients' demographic and clinical characteristics, catheter-related complications, and risk factors were recorded using data collection forms developed by the researcher based on the literature. Catheter complications were evaluated under the categories of infection, phlebitis, extravasation, occlusion, and catheter dislodgement. The severity of extravasation was assessed according to the NCI-CTCAE v5.0 criteria, while phlebitis was graded using the Infusion Nurses Society (INS) Phlebitis Scale. The ECOG (Eastern Cooperative Oncology Group) Performance Scale was used to determine patients' performance scores.

Data were analyzed using SPSS version 26.0. Descriptive statistics (frequency, percentage, mean, standard deviation) were used, and relationships between variables were evaluated using appropriate statistical methods.

RESULTS

A total of 113 patients were included in the study. Of these, 56.6% were female (n=64) and 43.4% were male (n=49). Hypertension was present in 38.1% of patients, diabetes in 25.7%, and a history of smoking in 31.9%. Metastasis was identified in 35.4% of patients. A history of previous catheter-related complications was reported in 48.7% of participants. The most common reasons for hospitalization were chemotherapy (33.6%), general condition deterioration (31.0%), and fever (23.9%). Most catheter insertions were performed in the ward setting (99.1%).

Catheter Characteristics and Complications

The most frequently observed symptoms were pain (30.1%), erythema (29.2%), and extravasation (28.3%). The phlebitis rate was 13.3%. Among catheter-related complications, occlusion was the most common (34.5%), primarily due to the absence of blood return (17.7%) and inability to infuse through the catheter (15.9%). The rate of catheter dislodgement was 22.1%, with 14.2% occurring spontaneously and 8.0% following manipulation. Regarding treatment modalities, 42.5% of patients received chemotherapy, 10.6% radiotherapy, and 8.8%

targeted therapy. The most common intravenous treatments were fluid replacement (54.9%) and antibiotic therapy (52.2%). Vesicant drugs were administered in 10.6% of cases, and irritant drugs in 29.2%. The most common catheter insertion sites were the left lower forearm (23.0%), right lower forearm (18.6%), and dorsum of the right hand (12.4%). Risk factor analysis showed that 12.4% of catheters remained in place for more than five days, 23.9% were reinserted at the same site, and 31.0% were used for total parenteral nutrition. The mean hospital stay was 64.44 ± 14.82 days, and the mean experience of the nurse inserting the catheter was 43.95 ± 38.72 months. Phlebitis developed on average within 2.50 ± 1.02 days, and extravasation within 2.20 ± 2.18 days. The mean severity scores were 1.06 for phlebitis and 1.76 for extravasation.

Determinants of Risk Factors

Extravasation was significantly more frequent in patients receiving targeted therapy ($\chi^2=5.425$; $p=0.020$). A significant difference in age was observed between patients with and without catheter dislodgement ($p=0.006$), with a higher mean age in the dislodgement group. A statistically significant association was also found between ECOG performance score and catheter dislodgement ($p=0.048$), indicating higher dislodgement rates in patients with higher ECOG performance score. A significant association was found between nurse experience and catheter dislodgement ($p=0.033$), with higher dislodgement rates in catheters inserted by less experienced nurses. Reinsertion at the same site was also significantly associated with dislodgement ($\chi^2=4.579$; $p=0.032$). Metastasis was another significant factor associated with increased dislodgement rates ($\chi^2=3.869$; $p=0.049$). Use of irritant drugs (excluding chemotherapy) was significantly associated with catheter occlusion ($\chi^2=5.585$; $p=0.018$). No significant association was found between catheter insertion site and phlebitis ($\chi^2=10.903$; $p=0.365$) or extravasation ($\chi^2=10.475$; $p=0.400$). Similarly, prolonged hospitalization was not significantly associated with phlebitis ($\chi^2=0.972$; $p=0.324$), extravasation ($\chi^2=0.055$; $p=0.815$), or occlusion ($\chi^2=0.909$; $p=0.340$). No significant relationship was found between catheter dwell time of more than 5 days and phlebitis ($p=0.029$) or extravasation ($p=0.331$).

DISCUSSION

This study demonstrated that PIVC-related complications remain a significant clinical problem. A systematic review and meta-analysis by Marsh et al. (2024) highlighted that PIVC complications represent an underrecognized patient safety issue, with approximately one-third (36%) of catheters failing during treatment, without significant improvement over time (6). In a prospective study of cancer patients, 39.4% of vascular access attempts failed, requiring 396 attempts across 200 patients (14). These findings underscore the importance of identifying the incidence and risk factors of catheter-related complications to inform preventive strategies. Extravasation rates were significantly higher with peripheral access than with central venous catheters in a large cohort of chemotherapy administrations (7). The risk of PIVC-related complications is influenced by multiple factors, including catheter material, dwell time, insertion site, infusion characteristics, and patient-related factors such as age and sex (8). Previous studies report complication rates of approximately 30% in adult patients, with phlebitis rates ranging from 5% to 30% (11). In the present study, occlusion (34.5%), dislodgement (22.1%), and extravasation (28.3%) were the most common complications, while the phlebitis rate (13.3%) was consistent with the literature. However, the relatively higher rates of extravasation and occlusion suggest that oncology patients constitute a high-risk group. The high rate of catheter occlusion highlights the importance of appropriate catheter care practices, including flushing protocols, proper securement, and early assessment (12). The high rate of catheter dislodgement suggests the need to reevaluate securement methods. Previous randomized controlled trials have shown that the use of multiple securement strategies reduces complication rates (13). Appropriate catheter insertion techniques and site selection are essential to minimize complications (15). Although distal sites are generally associated with higher complication risks (17), no significant association was found in this study. In oncology, patients receiving vesicant or irritant drugs require appropriate catheter selection and site choice. Guidelines recommend the use of central venous access for the administration of vesicant drugs when feasible (17). Patient-related factors, such as advanced age, higher ECOG performance score, and metastasis, were associated with increased dislodgement risk. Patients with higher ECOG performance scores may have increased catheter dislodgement risk due to greater care dependency, impaired general condition, fragile skin integrity, and frequent repositioning during nursing care, all of which may negatively affect catheter stability. Additionally, nurse experience was identified as an important determinant, emphasizing the role of technical skill and training (19,20). The higher rate of extravasation in patients receiving targeted therapies may be explained by endothelial damage and increased vascular permeability. The association between irritant

drug use and catheter occlusion further supports the need for proper flushing protocols (12,21). Early identification of patients at high risk of difficult intravenous access using tools such as the Intravenous Cannulation Risk Assessment Tool may help reduce complications (18).

CONCLUSION

The findings of this study emphasize the need for a multifaceted approach to prevent catheter-related complications. Standardization of catheter insertion and maintenance practices, increased training, prevention of unnecessary catheter use, appropriate catheter selection, and early removal of unused catheters are strongly recommended.

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OP - 041

Distress and Reintegration to Normal Living Among Oncology Patients: The Mediating Role of Rumination and Anxiety

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Objective: Receiving a cancer diagnosis may impose not only physical but also significant psychological burdens, such as distress, ruminative thinking, and worry, which can adversely affect daily functioning and reintegration to normal living. The recognition of distress as the sixth vital sign in oncology care further highlights the clinical importance of addressing these variables together. Although previous studies have examined the relationship of rumination and worry with distress, no study has evaluated their mediating role in the relationship between distress and reintegration to normal living. This study aimed to examine the mediating roles of rumination and worry in the relationship between distress and reintegration to normal living among oncology patients.

Materials-Methods: This cross-sectional and correlational study was conducted with 189 cancer patients receiving radiotherapy treatment at a city hospital in Istanbul between November 2024 and March 2025. Data were collected using the Personal Information Form, Penn State Worry Questionnaire, Ruminative Thought Style Questionnaire, Distress Thermometer, and Reintegration to Normal Living Index. Data were analyzed using correlation, multiple regression, and mediation analyses through SPSS and Process Macro.

Results: Of the participants, 74.6% were women, and the highest proportion (34.9%) was in the 65 years and older age group. Mean scores for worry, rumination, distress, and reintegration to normal living were 49.11±14.38, 81.68±23.03, 5.73±2.72, and 36.42±9.00, respectively. Distress was positively and significantly correlated with worry ($r=.42$, $p<.01$) and rumination ($r=.36$, $p<.01$). However, the relationships of distress, worry, and rumination with reintegration to normal living were not significant ($p>.05$). Regression analysis showed that distress did not significantly predict reintegration to normal living ($F=0.069$, $p=.793$, $R^2=.000$). In contrast, distress significantly and positively predicted rumination ($\beta=0.363$, $B=3.070$, $p<.001$) and worry ($\beta=0.423$, $B=2.233$, $p<.001$), explaining 13.2% and 17.9% of the variance, respectively. Mediation analyses also indicated that although distress had a significant effect on rumination and worry, neither these variables nor the direct effect of distress significantly influenced reintegration to normal living.

Conclusion(s): Distress was closely associated with worry and rumination in oncology patients; however, these cognitive and emotional problems did not show a direct or indirect effect on reintegration to normal living. Multiple factors, including physical capacity, symptom control, treatment context, and social functioning, may shape reintegration to normal living. Future studies should focus on evidence-based interventions to reduce distress and on longitudinal designs that consider other variables affecting reintegration to normal living.

Keywords: Distress, reintegration to normal living, worry, rumination, mediating effect



OP - 042

The Effect of Cancer Response Style on Anxiety and Depression Levels in Newly Diagnosed Lung Cancer Patients

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Objective: The aim of this study was to investigate the effect of mental adjustment to cancer on anxiety and depression levels in patients newly diagnosed with lung cancer.

Materials-Methods: This descriptive and correlational study was conducted with 150 patients receiving treatment at a university hospital in western Türkiye. Data were collected using the "Descriptive Information Form," the "Mental Adjustment to Cancer Scale," and the "Hospital Anxiety and Depression Scale." IBM SPSS version 22 was used for statistical analysis.

Results: The results indicated that the fighting spirit subscale significantly and strongly reduced both anxiety ($\beta = -0.65, p < 0.001$) and depression ($\beta = -0.60, p < 0.001$) levels. Conversely, the anxious waiting subscale was associated with significantly increased levels of anxiety ($\beta = 0.51, p < 0.001$) and depression ($\beta = 0.43, p < 0.001$).

Conclusion(s): This study revealed that mental adjustment to cancer significantly affects anxiety and depression levels in patients diagnosed with lung cancer. Therefore, healthcare professionals should focus on psychosocial interventions that promote a fighting spirit, while also identifying and managing risk-associated responses such as anxious waiting, helplessness, and denial through appropriate counseling and support programs. Integration of psycho-oncological evaluations into the routine treatment process is strongly recommended.

Keywords: Lung cancer, mental adjustment to cancer, anxiety, depression



OP - 043

Hope Levels and Psychosocial Adjustment in Cancer Patients Undergoing Immunotherapy: A Descriptive Cross-Sectional Study

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Objective: Immunotherapy, has ushered in a new era in cancer treatment in recent years. Unlike traditional treatment methods, it aims to restore or enhance the immune system's ability to recognise and destroy cancer cells by activating it. The effects of immunotherapy are not limited to the biological level; it is also regarded as a significant factor that can influence patients' levels of hope and their psychosocial adjustment processes. The aim of this study is to determine the levels of hope and psychosocial adjustment in cancer patients receiving immunotherapy treatment and to identify the factors associated with these levels.

Materials-Methods: This descriptive cross-sectional study was conducted between December 2023 and June 2024 with 144 cancer patients receiving immunotherapy treatment. The data for the study were obtained using the Patient Information Form, the Psychosocial Adjustment to Illness-Self-Report Scale (PAIS-SR), and the Herth Hope Index.

Results: The mean age of the patients was 62.61 ± 8.88 years and 66.4 % were male. The mean total score on the Herth Hope Index for patients was 39.25 ± 4.47 , and the mean total score on the PAIS-SR scale was 21.53 ± 12.27 . Hope level, was positively associated with chemotherapy and radiotherapy treatment, and negatively associated with presence of chronic disease and presence of treatment-related side effects. PAIS-SR was negatively associated with income level and health insurance and positively associated with disease diagnosis and chemotherapy. When the relationships between PAIS-SR subscale scores and hope scores were examined, a significant negative correlation was found only between the sexual intercourse subscale score and the hope score.

Conclusion(s): Cancer patients receiving immunotherapy experience high levels of hope and have good psychosocial adjustment. While no significant overall relationship was found between psychosocial adjustment and hope level, a significant relationship was detected only between the sexuality sub-dimension and hope level. It is recommended that multidimensional and holistic care approaches be adopted to maintain and strengthen psychosocial adjustment and levels of hope.

Keywords: Cancer, immunotherapy, hope, psychosocial adjustment

OP - 044

The experience of chemotherapy-induced peripheral neuropathy: a mixed-methods study in patients receiving neurotoxic chemotherapy

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Objective: Chemotherapy-induced peripheral neuropathy (CIPN) is a common and distressing condition in patients receiving neurotoxic chemotherapy and can significantly affect daily functioning. However, most existing research has focused on symptom severity, with limited evidence on patients' lived experiences. This study aimed to explore the impact of CIPN on daily life and to examine patients' experiences.

Materials-Methods: This study used a sequential explanatory mixed-methods design. The quantitative phase included 69 patients receiving neurotoxic chemotherapy in a university hospital, using a patient information form and the Chemotherapy-Induced Peripheral Neuropathy Assessment Tool (CIPNAT). Patients who answered "yes" to at least one of the first four CIPNAT items were included. Hierarchical multiple linear regression, along with descriptive and parametric analyses, was used to identify predictors of daily life interference. The qualitative phase involved 12 patients and was conducted through face-to-face semi-structured interviews. Data were analyzed using Braun and Clarke's thematic analysis, with codes and themes developed by the first author and refined with the second author. Quantitative and qualitative findings were integrated during interpretation to provide a comprehensive understanding of the impact of CIPN on daily life.

Results: Patients reported moderate neuropathy and variable interference in daily life (91.64±57.55; 25.88±25.63). The final regression model (diagnosis, treatment group, symptom severity, treatment duration) explained 30.6% of the variance in daily life interference (Adj. R²=.306, p<.001). Symptom severity increased interference (B=0.514), while longer treatment duration reduced it (B=-0.170). Colorectal cancer was associated with lower interference, while the taxane + platinum group showed no significant difference. Qualitative findings identified three themes: bodily estrangement, erosion of daily life, and coping efforts.

Conclusion(s): CIPN affects daily life primarily through symptom severity. Patients' experiences indicate that coping is a dynamic and cyclical process. These findings highlight the need for nursing interventions that address not only symptom management but also adaptive coping processes.

Keywords: CIPN, mixed-methods research, patient experiences, oncology nursing, symptom burden

OP - 045

The Effect of Mandala Coloring on Anxiety, Nausea, and Comfort Levels During Chemotherapy

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Objective: Patients receiving chemotherapy may experience psychological symptoms (fear of recurrence, uncertainty, anxiety) and physical symptoms (nausea, vomiting, loss of appetite). Non-pharmacological interventions are increasingly used to manage symptoms without additional side effects. This study aimed to examine the effects of mandala coloring on anxiety, nausea, and comfort in patients during chemotherapy.

Materials-Methods: This randomized controlled trial was conducted in the outpatient chemotherapy unit of a university hospital's medical oncology department. Ethical committee and institutional approvals were obtained before initiating the study. The research protocol was registered at ClinicalTrials.gov (NCT07269340). Patients meeting the inclusion criteria were assigned to either the mandala group (MG) or control group (CG). Patients in the MG (n=37) were provided with a mandala book and 12 colored pencils and asked to color a picture of their choice. After intravenous access was established on the non-dominant arm, patients colored for at least 30 minutes. No additional intervention was applied to the CG (n=36). Data were collected before and after chemotherapy using a Patient Information Form, State-Trait Anxiety Inventory, Visual Analog Scale for Nausea, Visual Analog Scale for Comfort, Distress Thermometer, and Visual Analog Scale for Satisfaction. Data analysis was performed using SPSS 29.0. Chi-square and Student's t-tests were used for between-group comparisons, while repeated measures mixed-design ANOVA was used for group-time interactions.

Results: No significant differences were found between groups regarding sociodemographic and disease characteristics or baseline anxiety, nausea, comfort, and distress levels ($p > 0.05$). Post-chemotherapy measurements revealed significant differences between groups in anxiety, nausea, comfort, and distress levels ($p < 0.05$). Mixed-design ANOVA analyses demonstrated a statistically significant time effect between the MG and CG for anxiety, comfort, and distress levels ($p = 0.001$). The repeated measures group \times time interaction showed significant differences between groups in anxiety, nausea, comfort, and distress levels ($p = 0.001$). Additionally, mean satisfaction scores were significantly higher in the MG (8.62 ± 1.25) compared to the CG (7.55 ± 1.29) ($p = 0.001$).

Conclusion(s): Mandala coloring during initial chemotherapy treatment reduced patients' anxiety, nausea, and distress levels while increasing comfort and satisfaction levels. Mandala coloring can be utilized in chemotherapy units as a non-pharmacological intervention for managing patients' physiological and psychological symptoms.

Keywords: Anxiety, chemotherapy, comfort, nausea, mandala

OP - 046

The role of caregiver burden and perceived social support in predicting illness acceptance among gynecological cancer patients: A relational dyadic cross-sectional study

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Objective: Gynecological cancers require long-term supportive care for both patients and caregivers. Illness acceptance, a key indicator of psychological adaptation, may be influenced by caregiver-related factors. This study aimed to examine the predictive roles of caregiver burden and caregiver-perceived social support on illness acceptance in patients with gynecological cancer.

Materials-Methods: The study was conducted using a descriptive and correlational cross-sectional design. A total of 171 patient-caregiver pairs were recruited from a tertiary oncology center between January and June 2024. Data were collected using the Acceptance of Illness Scale (AIS) for patients, and the Zarit Caregiver Burden Scale (ZCBS) and Multidimensional Scale of Perceived Social Support (MSPSS) for caregivers. Hierarchical linear regression and mediation analysis were performed.

Results: The mean AIS score of patients was 24.58 ± 10.50 , while the mean ZCBS and MSPSS scores of caregivers were 22.06 ± 10.19 and 72.38 ± 13.07 , respectively. Caregiver burden negatively predicted illness acceptance ($\beta = -0.368$, $p < 0.001$), whereas perceived social support positively predicted illness acceptance ($\beta = 0.164$, $p = 0.020$). The advanced clinical stage was independently associated with illness acceptance across all models ($\beta = -0.170$, $p = 0.038$). Mediation analysis showed that caregiver burden negatively affected perceived social support ($B = -0.269$, $p = 0.009$), and perceived social support positively predicted illness acceptance ($B = 0.121$, $p = 0.026$). The indirect effect was statistically significant ($a \times b = -0.033$; 95% CI [-0.072, -0.001]).

Conclusion(s): The findings indicate that caregiver burden is associated with illness acceptance in gynecological cancer patients both directly and indirectly through perceived social support. These results highlight the importance of assessment approaches that consider the interaction between patients and caregivers, as well as caregiver-focused supportive interventions in gynecological oncology care.

Keywords: Social support, caregiver burden, illness acceptance, correlational study, gynecological cancer

OP - 047

The Retrospective Audiological Monitoring of Platinum-Based Chemotherapy-Induced Ototoxicity in Pediatric Oncology Patients

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Objective: Platinum-based agents (cisplatin and carboplatin) are effective antineoplastic agents that serve as cornerstones in the treatment of childhood cancers. However, alongside increases in survival rates, long-term treatment-related side effects have become a growing concern. One such side effect, ototoxicity, is hearing loss caused by damage to the inner ear structures, which is typically irreversible and progressive in nature. The aim of this study was to retrospectively evaluate the audiological monitoring of ototoxicity developing in pediatric oncology patients receiving platinum-based chemotherapy.

Materials-Methods: This retrospective study included patients aged 1 month to 18 years who received platinum-based chemotherapy at the pediatric hematology/oncology clinic between 2015 and 2023 and had pre- and post-treatment audiometric evaluations. Data were obtained from the hospital information system and patient records. Audiometric evaluations were performed in the 250–6000 Hz frequency range, and hearing loss was classified according to American Speech-Language-Hearing Association criteria. Statistical analyses included descriptive statistics, the Wilcoxon signed-rank test, the Mann–Whitney U test, the chi-square test, and Fisher’s exact test; effect size was calculated using the r coefficient ($p < 0.05$).

Results: A total of 14 patients were included in the study. A general increase in hearing thresholds was observed post-treatment, and it was determined that this increase varied depending on frequency. While significant changes were detected in low and mid-frequencies, the most pronounced increase was observed in high frequencies (4000–6000 Hz), and the effect size was found to be high at these frequencies. In the assessment of high-frequency hearing loss, hearing loss was detected in 85.7% of the patients. No statistically significant relationship was found between clinical and demographic variables and hearing loss. When comparing low and high frequencies, it was determined that the increase in hearing thresholds was significantly greater at high frequencies. In comparisons between the right and left ears, a tendency toward greater hearing loss was observed in the left ear; however, this difference was not statistically significant.

Conclusion(s): Platinum-based chemotherapy causes a significant ototoxic effect in pediatric oncology patients, and this effect is particularly pronounced at high frequencies. Regular audiological monitoring is of great importance for the early detection of hearing loss.

Keywords: Pediatric oncology, ototoxicity, platinum-based chemotherapy, audiological monitoring

OP - 048

High School Students' Perspectives on Childhood Cancer: A Metaphorical Analysis

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Objective: Childhood cancer is a multidimensional experience that is not limited to its biological effects alone; it is shaped by individuals' cognitive, emotional, and social processes of meaning-making. Therefore, understanding how individuals—particularly adolescents—perceive the disease is crucial for raising public awareness and improving care processes. This study aims to examine high school students' perceptions of childhood cancer through metaphors and to elucidate the cognitive, emotional, and social dimensions of these perceptions.

Method: This research was conducted as a descriptive qualitative study based on a phenomenological approach. The sample consisted of 245 high school students aged 14–18. Data were collected using a semi-structured interview form designed to elicit participants' perceptions of childhood cancer through metaphors. In this context, participants were asked to complete the following statements: "A child with cancer is like ... because ...," "Society's view of a child with cancer is like ... because ...," "Being friends with a child with cancer is like ... because ...," and "A child fighting cancer is like ... because" Metaphors were used to reveal participants' cognitive, emotional, and social interpretation processes. The collected data were analyzed using an inductive approach in line with Braun and Clarke's thematic analysis method.

Results: The analysis revealed that high school students' perceptions of childhood cancer were structured around four main themes: (1) fragility and vulnerability, (2) uncertainty and fear, (3) struggle and resilience, (4) social isolation and stigmatization. Participants described children with cancer as fragile and sensitive individuals using metaphors such as "flower," "butterfly," and "glass"; while metaphors like "tunnel," "maze," and "infinity" indicated that the disease was perceived as an uncertain and unpredictable process. In contrast, metaphors such as "lion," "warrior," and "marathon runner" revealed that children with cancer are also viewed as resilient and fighting individuals. Additionally, metaphors like "caged bird," "aquarium," and "alien" point to the presence of perceptions of social isolation and stigmatization. The findings reveal a multidimensional perception structure where negative (vulnerability, fear) and positive (struggle, hope) representations coexist.

Conclusion(s): High school students' perceptions of childhood cancer are not limited to the disease's medical dimension but are shaped by emotional and social interpretation processes. This suggests that educational and awareness initiatives targeting adolescents should focus on reducing stigma, increasing social acceptance, and fostering a balanced perception. Additionally, nursing practices must support children's vulnerable aspects as well as their coping capacities and psychosocial strengths.

Keywords: Childhood cancer, metaphor analysis, adolescent, stigmatization



OP - 049

The Scientific Evolution of Nurse Navigation Programs: A Bibliometric Mapping Study

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Objective: The aim of this retrospective bibliometric analysis is to visualize the trends, dynamics, and recent developments in publications related to navigation in the field of nursing. In addition, author keywords, annual publication counts, publication titles, citation patterns, and international collaborations were summarized and visualized.

Materials-Methods: Utilizing descriptive and bibliometric analysis techniques. The data were obtained from the Web of Science database using an advanced search strategy. The study data were analyzed using R Studio software and visualized with VOSviewer. The study evaluated the annual publication trends, author, country, and institutional analyses, journal and citation analyses, collaborations among countries, institutions, and authors, co-citation analyses of journals and authors, thematic clustering, and keyword analysis.

Results: A total of 382 studies were included. Academic interest in nurse navigation programs has shown a marked increase since 2009. The United States stands out as the country with the highest number of publications, while Australia and Canada also make significant contributions. Yale School of Medicine and Central Queensland University were among the most productive institutions. The majority of the studies were oncology-focused and were published in journals such as "Supportive Care in Cancer" and "Oncology Nursing Forum". Keyword analysis revealed that terms such as "nurse navigator" and "care coordination" were prominently featured.

Conclusion(s): The findings of this study are expected to contribute to the evaluation of the current state of nurse navigation programs and to guide future research in this field.

Keywords: Bibliometrics, nurses, navigation programmes



OP - 050

A bibliometric and visualization analysis of global research on cancer-related stigma: A descriptive study

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Objective: In oncology nursing, cancer-related stigma is increasingly recognized as a significant psychosocial factor that influences individuals' psychological well-being, treatment adherence, and quality of life. Despite its importance, the structure, trends, and developmental trajectory of scientific output in this field have not been comprehensively examined. This descriptive study aims to conduct a bibliometric and visualization-based analysis of global research on cancer-related stigma in order to systematically explore the structural characteristics of the literature, collaboration networks, and thematic development areas.

Materials-Methods: Within the scope of this study, publications indexed in the nursing category of the Web of Science database between 2016 and 2025 were systematically retrieved and analyzed according to pre-defined inclusion criteria. The bibliometric analysis included evaluation of publication performance, author and country collaborations, co-occurrence networks, thematic mapping, and trend topic analysis to identify evolving research directions over time. All analyses were conducted using R software and relevant bibliometric packages.

Results: A total of 154 articles were included in the analysis. The findings demonstrated a steady increase in the number of publications over the years, with a marked acceleration in recent years. China emerged as the leading country in terms of both publication output and citation counts and demonstrated a strong position in international collaboration through a high multiple-country publication ratio. Thematic map analysis revealed that "return to work," "young adults," and "social aspects" have high developmental potential and may evolve into motor themes. Trend topic analysis identified "qualitative studies," "young adults," and "psychological distress" as current high-interest topics, while "cervical cancer" emerged as a newly developing research trend in the field of cancer-related stigma.

Conclusion(s): The findings indicate that research on cancer-related stigma is becoming increasingly diversified, with a growing emphasis on specific patient populations and psychosocial dimensions. Future studies are recommended to focus on cervical cancer, young adults, psychological distress, return-to-work processes, and the social dimensions of stigma. This study provides a strategic scientific roadmap for oncology nurses, supporting efforts to address stigma as a modifiable determinant of psychological well-being, quality of life, and equity in cancer care.

Keywords: Bibliometric analysis, cancer-related stigma, nursing, oncology



OP - 051

Review of Postgraduate Theses on Occupational Psychological Well-being and Risks in Oncology Nursing: A Systematic Review

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Oncology nursing is a specialty where professional psychological well-being is crucial due to the intense stress and burnout risks encountered in caring for cancer patients. The aim of this systematic review is to methodologically evaluate postgraduate theses examining the professional and psychological experiences of oncology nurses in Türkiye and to identify trends in the literature. The study was conducted in accordance with PRISMA guidelines. Seven postgraduate theses completed between 2008 and 2025 that met the inclusion criteria were examined through a search conducted between February and April 2026 via the Council of Higher Education (YÖK) National Thesis Center database. The methodological profile of the studies examined is generally descriptive and correlational. The findings showed that factors such as length of service, educational status, and workload in the unit have an impact on the job satisfaction and burnout levels of oncology nurses. It was determined that compassion fatigue is a determining factor in caregiving behaviors, while psychoeducation and psychodrama-based interventions support the post-traumatic growth of nurses and significantly reduce burnout. In conclusion, there appears to be a limited number of postgraduate studies on the psychological health of oncology nurses, and more intervention-based evidence is needed. Current findings highlight the effectiveness of institutional support and structured psychological intervention programs in improving professional quality of life.

Keywords: Burnout, compassion fatigue, oncology nursing, systematic review

Table 1. Characteristics of Graduate Theses Included in the Study

Thesis Type	Author	Year	Country	Study Design	Sample	Instruments	Intervention	Key Findings
Master's Thesis	Eren	2008	Türkiye	Descriptive and Correlational	n=115; Mean age=31.6 years	Demographic Form, Life Satisfaction Scale, Minnesota Satisfaction Questionnaire	No intervention	A strong positive correlation was found between life satisfaction and job satisfaction among oncology nurses (p<0.001). Significant differences were observed according to education level, professional experience, and working conditions (p<0.05).
Master's Thesis	Tuna	2010	Türkiye	Descriptive	n=189; Mean age=32.13±8.58 years	Personal Information Form, Maslach Burnout Inventory, Job Stress Scale	No intervention	Oncology nurses reported moderate job stress and emotional exhaustion, low depersonalization, and high personal accomplishment. Significant differences were associated with gender, age, and institution type (p≤0.05).
Doctoral Thesis	Özbaş	2014	Türkiye	Quasi-experimental	n=82; Mean age=29.1 years	Personal Information Form, Beck Depression Inventory, Psychological Empowerment Scale, Nursing Workplace Empowerment Scale, Maslach Burnout Inventory	Psychodrama-based Psychological Empowerment Program (10 weekly sessions)	The intervention group showed increased psychological and workplace empowerment and significantly reduced burnout compared with the control group.
Doctoral Thesis	Yılmaz	2016	Türkiye	Descriptive and Quasi-experimental	Survey: n=182; Psychoeducation: n=43; Mean age=35.4±6.8 years	Nurse Information Form, Professional Quality of Life Scale, Posttraumatic Growth Inventory	Two-session psychoeducation program	Compassion fatigue and burnout decreased significantly, while compassion satisfaction and posttraumatic growth increased following psychoeducation (p≤0.05).
Master's Thesis	Çolakoğlu	2017	Türkiye	Mixed Methods	Quantitative: n=30; Qualitative: n=12; Mean age=33.6 years	Demographic Form, Job Stress Scale, Maslach Burnout Inventory	No intervention	A significant positive relationship was identified between job stress and burnout dimensions among oncology nurses.
Master's Thesis	Turhal	2025	Türkiye	Cross-sectional and Descriptive	n=89; Mean age=28.91±5.09 years	Personal Information Form, Good Death Scale, Brief Compassion Fatigue Scale, Caring Behaviors Scale	No intervention	Caring behaviors were high (5.15±0.64). Caring behaviors were positively associated with good death perception and negatively associated with compassion fatigue.
Master's Thesis	Demirel	2025	Türkiye	Descriptive and Correlational	n=24; Mean age=28.33 years	Personal Information Form, Good Death Scale, Brief Compassion Fatigue Scale, Caring Behaviors Scale	No intervention	Caring behaviors were high (5.22), while compassion fatigue was moderate (6.77). A very weak positive correlation was found between the "Respectful Deference to Others" subscale of caring behaviors and the "Secondary Trauma" subscale of compassion fatigue.



OP - 052

Turkish Adaptation of the Radiotherapy Experience Questionnaire (RTEQ): A Validity and Reliability Study

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Objective: This study adapted the Radiotherapy Experience Questionnaire (RTEQ) into Turkish to examine its validity and reliability, aiming to provide a culturally appropriate tool for evaluating patient experiences during radiotherapy.

Materials-Methods: A cross-sectional study was conducted with 240 radiotherapy patients (mean age 58.64±14.08 years) at a university hospital (2024–2025). The sample included diverse cancer types, with breast cancer being most prevalent (35.4%). The process followed international guidelines, including forward–backward translation, expert review, pilot testing, and content validity assessment. Construct validity was tested using exploratory and confirmatory factor analysis (EFA/CFA). Reliability was assessed through Cronbach's alpha and test–retest correlation.

Results: EFA confirmed the six-factor structure, explaining 67.7% of variance. CFA fit indices were acceptable ($\chi^2/df=1.80$, CFI=0.94, RMSEA=0.058, SRMR=0.061). Cronbach's alpha was 0.81 overall, with subscales 0.75–0.97. Test–retest reliability was strong ($r=0.887$).

Conclusion(s): The Turkish RTEQ is a valid and reliable tool for assessing radiotherapy experiences, supporting clinical practice and research to improve patient-centered care and treatment quality.

Keywords: Cross-cultural adaptation, patient experience, radiotherapy, RTEQ

OP - 053

Effect of Mobile-Based Education Given to Patients Undergoing Gynecological Oncology Surgery on Quality of Life: A Randomized Controlled Study

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Objective: Gynecologic cancers are the leading cause of morbidity and mortality in women. Improving the quality of life of gynecologic oncology patients is gaining importance due to the increase in life expectancy with treatment after diagnosis. Patient education can be provided with many innovative approaches to support patient quality of life. One of these approaches is mobile-based applications. This study aimed to determine the effect of mobile-based education on the quality of life of gynecologic oncology patients in the postoperative period.

Materials-Methods: This randomized controlled experimental design study was conducted between February 1 and September 30, 2024, with 77 patients, 38 in the experimental group and 39 in the control group. The research consisted of two phases. In the first phase, a mobile application was developed using the ADDIE model. In the second phase, data collection was carried out by applying the relevant interventions to the experimental and control groups. Descriptive Information Form, Cancer Patient Quality of Life Scale, Symptom Assessment Form, and Distress Thermometer were used for data collection. Patients were interviewed face-to-face before surgery, at discharge, and by telephone in the first and second weeks after discharge, and data collection forms were completed. Statistical analysis of the study's findings was performed using IBM SPSS Statistics 25.0. The data were analyzed at a 95% confidence interval and a significance level of $p < 0.05$.

Results: Socio-demographic characteristics, general health status, cancer diagnosis, type of surgery, and findings related to discharge were similar ($p > 0.05$). It was determined that the control group presented to the hospital with more health problems after discharge than the experimental group ($p < 0.05$). There was no significant difference between the women's mean quality of life scores in the experimental and control groups at the first preoperative interview ($p = 0.095$). In the first and second postoperative follow-up, the mean quality of life score of the women in the experimental group was significantly higher than that of the control group ($p = 0.000$). It was determined that the symptom severity in the experimental group, the first and second follow-ups, was lower than in the control group. The distress thermometer score of the control group was significantly higher than the experimental group at the first follow-up ($p = 0.004$) and second follow-up ($p = 0.044$) after discharge.

Conclusion(s): The evaluation revealed that the mobile application has good usability. Mobile-based education improved the quality of life of patients who underwent gynecologic oncology surgery.

Keywords: Gynecological oncology, mobile application, quality of life



OP - 054

Artificial Intelligence in Oncology Nursing: Clinical Applications and Future Directions

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This study aims to examine current evidence on the applications of artificial intelligence (AI) in oncology nursing and to evaluate its roles, contributions, limitations, and future directions in clinical practice. Artificial intelligence technologies, including machine learning, deep learning, and natural language processing, contribute significantly to cancer care by supporting early detection, risk prediction, symptom management, and personalized treatment approaches. AI-driven systems enhance clinical decision-making, enable early identification of treatment-related adverse events, and improve patient monitoring, thereby increasing care quality and reducing healthcare professionals' workload. In addition, digital health solutions and wearable technologies facilitate continuous patient monitoring and contribute to improved quality of life. However, challenges such as data quality and standardization issues, algorithmic bias, ethical and legal concerns, and limited AI literacy among healthcare professionals remain critical barriers. In conclusion, while AI offers substantial opportunities for advancing oncology nursing, its safe, ethical, and effective integration requires interdisciplinary collaboration, targeted education programs, legal regulations, and the development of standards.

Keywords: Artificial intelligence, clinical decision support systems, personalized medicine

INTRODUCTION

Artificial intelligence (AI) is increasingly recognized as a transformative force in the field of oncology nursing. This digital transformation in healthcare services improves the quality of patient care, streamlines clinical workflows, and provides innovative solutions and approaches to challenges in cancer management (Dönmez et al., 2026). Artificial intelligence encompasses diagnostic, treatment, and care processes in cancer management. This expands the role and competencies of oncology nurses (Wang et al., 2026). The clinical application of artificial intelligence in oncology holds significant potential for improving patient outcomes and alleviating the burden on healthcare systems (Zhou et al., 2024). In particular, AI technologies support clinical decision-making processes through predictive models and contribute to the development of personalized patient-care plans. These advancements have been made possible by machine learning and deep learning algorithms operating on large and specialized cancer datasets. These algorithms contribute to the development of prognostic assessments and treatment strategies by analyzing complex patterns (Koo et al., 2024). Additionally, AI's rapid data analysis capabilities enable the early detection of cancer, optimization of treatment protocols, and implementation of personalized therapeutic interventions across various cancer types (Aftab et al., 2025). This study aimed to review the current literature on AI applications in oncology nursing and evaluate the clinical applications of these technologies, their contributions, the challenges encountered, and future perspectives.

An Overview of Artificial Intelligence Technologies in Oncology Nursing

Artificial intelligence (AI) encompasses various computational techniques, including machine learning (ML), natural language processing (NLP), deep learning, fuzzy logic systems, and hybrid methods. Among these methods, machine learning stands out, particularly in predictive modeling and risk assessment processes

related to cancer symptoms and treatment outcomes (O'Connor et al., 2024; Zhou et al., 2024). Natural language processing (NLP) is used to analyze nursing observation notes and patient communications to identify symptom clusters and improve symptom management. Additionally, AI applications contribute to the development of chatbots and virtual assistants used in complex medical problems, such as cancer diagnosis, disease progression prediction, and disease management. The integration of these technologies into oncology nursing practice enables more proactive interventions by developing and strengthening decision-support systems. Consequently, these technologies can contribute to improving patients' quality of life (Asper et al., 2025; Trojan et al., 2024).

The use of artificial intelligence in oncology supports risk classification and corresponding individualized care and prevention strategies by enabling a comprehensive evaluation of various sources, such as multi-omic data, electronic health records, patient-reported outcomes, and imaging data (Lee et al., 2025; Riaz et al., 2025). In this context, AI applications in oncology nursing primarily focus on risk prediction, symptom detection and monitoring, decision support, and care coordination (Sezgin & Bektas, 2025).

These developments are of even greater significance when considering the global burden of cancer. In 2022, approximately 20 million new cancer cases and 9.8 million cancer-related deaths were reported worldwide (GLOBOCAN, 2022). The rising incidence and mortality rates highlight the need for advanced technological solutions that can improve diagnostic accuracy, treatment efficacy, and overall patient management. In this context, computational intelligence methods, including artificial intelligence and machine learning, play a significant role in transforming cancer care through the opportunities they offer for early diagnosis, personalized treatment, and effective disease management.

Clinical Applications and Impact

AI-powered tools have demonstrated the potential to improve the accuracy and efficiency of predicting adverse events, such as chemotherapy-related side effects, venous thromboembolism, lymphedema, and the risk of infection (Bodur et al., 2025; Jiang et al., 2025). Predictive models based on machine learning algorithms enable the early identification of high-risk patients, thereby facilitating timely interventions, which contributes to reducing morbidity and the more effective use of healthcare resources (DankwaMullan et al., 2025; Ghebrebrhan, 2026). This predictive capability supports nurses' proactive interventions, contributing to improved patient outcomes and streamlined care delivery (Nematollahi Maleki et al., 2025). Additionally, AI systems can develop highly accurate prognostic models for various cancer outcomes by comprehensively processing and integrating structured clinical data with unstructured text data. These models advance risk stratification and personalized treatment approaches to a new level (Hamamoto et al., 2022). Advanced data integration enables oncology nurses to plan care and interventions in a patient-specific manner, thereby making a significant contribution to the advancement of oncology practices (Adeoye et al., 2022).

AI-based nursing interventions include symptom monitoring, chatbot use, and virtual assistant support. These applications aim to maximize patient well-being by reducing the burden of symptoms, such as pain and anxiety, in cancer management through the continuity of data and educational opportunities they provide. Typically based on large language models (ChatGPT, Gemini, Claude, DeepSeek, etc.), these technologies can analyze large volumes of data to support patient care plans, patient education, and care coordination, thereby enabling the restructuring of oncology nursing workflows (Nashwan & Hani, 2023).

AI applications are not limited to patient care; they also support administrative efficiency in oncology departments. In particular, they offer strategic solutions for optimizing resource allocation and reducing documentation burdens. This allows nurses to devote more time to direct patient care (Charalambous & Dodlek, 2026; Nashwan & Hani, 2023). AI integration moves oncology nursing beyond routine tasks, steering it toward more advanced clinical reasoning and patient advocacy roles. In this context, nurses enhance the quality of holistic patient care by integrating clinical insights generated by AI with their professional knowledge and experience (Britney Starr et al., 2023).

This digital transformation is even more significant when considering the increasingly broad scope of cancer care, which encompasses prevention, treatment, survival, and palliative care processes. Artificial intelligence technologies not only support care processes but also hold the potential to reduce the nursing workload, address workforce shortages, and improve the quality of patient care (Dönmez et al., 2026; Sulosaari, 2025).

In their meta-analysis, Sezgin and Bektaş (2025) found that AI-supported interventions provided moderate improvements in the management of pain and anxiety symptoms and led to significant increases

in quality of life (Sezgin & Bektas, 2025). Additionally, approaches focusing on holistic symptom management rather than individual symptoms have been reported to more effectively improve patients' quality of life (Sattari et al., 2025).

The integration of AI into clinical practice is not limited to improving patient outcomes; it also supports the evolution of oncology nurses' roles. This process enables nurses to leverage innovations in health technology to manage complex patient needs more effectively (Glennon, 2024). Consequently, the increasing integration of artificial intelligence into oncology nursing necessitates a reevaluation of educational approaches to ensure that nurses are equipped with the necessary knowledge and skills to use these technologies effectively (Britney Starr et al., 2023; Lee et al., 2025). However, upholding ethical principles and maintaining a patient-centered care approach are crucial for the effective and safe use of these technologies. In this regard, human-centered AI approaches that prioritize empathy and human oversight in clinical decision-making processes are recommended (Girdwood et al., 2026).

Future Perspectives

To fully leverage the potential of artificial intelligence in oncology nursing, future research should prioritize the validation of models developed using diverse and multicenter samples in real clinical settings. Additionally, to support the safe and effective use of artificial intelligence, ethical and legal frameworks must be strengthened, standardized application protocols must be developed, and artificial intelligence competencies must be integrated into nursing education curricula. Interdisciplinary collaborations among all health-care professionals—including nurses and physicians—as well as patients, technology experts, and policymakers, will contribute to the development of human-centered AI applications that align with clinical needs and patient values.

CONCLUSION

AI applications in oncology nursing offer significant opportunities to improve symptom management, personalize care, enhance workflow efficiency, and reduce disparities in cancer care. However, to realize this potential, existing limitations must be addressed, and AI must be integrated using an ethical, safe, and patient-centered approach. Strengthening nurses' knowledge and competencies regarding AI-based technologies will support the effective and sustainable use of these systems in oncology care.

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Base of Tongue Carcinoma Adenocarcinoma Palliative Care Process and Nursing Care: Case Report

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Objective: Base of Tongue carcinoma is one of the most aggressive malignancies of the oropharyngeal region and is usually diagnosed at advanced stages. This study aims to examine the nursing care process of a patient diagnosed with tongue base carcinoma and followed up in a palliative care center, using a holistic approach.

Case Report: The patient first presented to a Medical Faculty Hospital 5 years ago with a complaint of a tongue ulcer. A biopsy of the oral ulcer at the ENT outpatient clinic revealed carcinoma of the base of the tongue. Surgery was the initial treatment option. During this time, the patient underwent two radical glossectomy operations, received 4 rounds of chemotherapy, and numerous head and neck radiotherapy treatments. After a period of remission, a recurrence and thyroid metastasis were detected 3 years ago, leading to total thyroidectomy. Finally, on November 6, 2025, the patient presented to the emergency department of a Training and Research Hospital with severe dyspnea and low SpO₂ (48%). Due to airway obstruction, intubation was not possible, and an emergency tracheostomy was performed, leading to admission to a tertiary intensive care unit. Simultaneously, a PEG (Percutaneous Endoscopic Gastrostomy) was placed in the patient, whose oral intake had completely stopped. The patient was admitted to palliative care in December due to nutritional and respiratory problems, pain, tracheostomy care, and psychological issues. Through interventions such as training for the patient and their family on nutrition, aspiration, PEG care, and tracheostomy care, as well as psychosocial support and medication management, the patient's general condition improved, and they were discharged home at the end of November.

Conclusion(s): Early palliative care is crucial in patients with advanced-stage cancers such as adenocarcinoma of the base of the tongue, which are rare but significantly impact human life, particularly through tongue involvement and skin lesions. Addressing communication problems, managing respiratory issues and symptoms, regulating nutrition, providing psychosocial support, and educating the family are critical in improving quality of life during the course of the disease

Keywords: Tongue base cancer, palliative care, oropharyngeal cancer, advanced stage cancer, nursing care

INTRODUCTION

Cancer is a complex disease characterized by the uncontrolled growth and proliferation of cells due to damage to DNA within the cell, and it is the second leading cause of death worldwide. Tongue base cancers, which are included in head and neck cancers, are among the tumors that are often detected late due to the anatomical depth of the oropharyngeal region and have a high potential for metastasis (Midilli, R. et al. 2025). Approximately 300,000 new cases of oral cancer are reported worldwide each year. Published reports indicate that the incidence of oral cancer in the world increases by 2.1% annually (Ferlay et al., 2015). Numerous risk factors have been shown to contribute to the development of oral cancers. Furthermore, it is known that these risk factors have a synergistic effect on each other. Risk factors include excessive alcohol consumption, tobacco use, poor oral hygiene, human papillomavirus (HPV), ethnicity, genetic predisposing factors, and a suppressed immune

system (Subapriya et al., 2007; Gotz et al., 2016). Symptoms of the disease include difficulty swallowing, a lump in the tongue, swelling in the neck, and referred ear pain. While treatment involves combinations of surgery, radiotherapy, and chemotherapy, palliative care plays a vital role in maintaining the patient's quality of life in advanced cases. Patients with partial or complete loss of the tongue, along with speech disorders, feeding problems, breathing difficulties, and communication problems, are particularly at high risk of needing palliative care. Furthermore, communication problems between the patient and family, difficulties in the caregiving process, and the complete disruption and deterioration of family dynamics are experienced more frequently and rapidly compared to other types of cancer. The patient's quality of life can be significantly impaired due to organ loss, anxiety, depression, insomnia, and other psychological problems, as well as the impact on their social and family life. For all these reasons, it is crucial for the patient to receive palliative care and have their needs met. The aim of this study is to examine the palliative care process and nursing care of a patient with advanced-stage tongue base cancer and to discuss palliative care and nursing approaches in a case of tongue base cancer with a 5-year disease history and approaching the terminal stage, in light of the literature.

CASE PRESENTATION

Socio-demographic Characteristics: M.G., 54 years old, is a housewife and mother of 4 children. The patient was admitted to the palliative care center conscious, cooperative, and oriented.

Patient History: The patient first presented to a Medical Faculty Hospital 5 years ago with a complaint of a tongue ulcer. A biopsy of the oral ulcer at the ENT outpatient clinic resulted in a diagnosis of carcinoma of the base of the tongue. Surgical intervention was the first option for the patient's treatment. During the process, two The patient underwent radical glossectomy surgery, received 4 rounds of chemotherapy and numerous head and neck radiotherapy treatments. After a period of remission, a recurrence and thyroid metastasis were detected 3 years ago, leading to total thyroidectomy. Finally, on November 6, 2025, the patient presented to the emergency department of the Training and Research Hospital with severe dyspnea and low SpO₂ (48%). Due to airway obstruction, intubation was not possible, and an emergency tracheostomy was performed, after which the patient was admitted to the tertiary intensive care unit. Simultaneously, a PEG (Percutaneous Endoscopic Gastrostomy) was placed as oral intake completely ceased. Due to nutritional and respiratory problems, pain, tracheostomy care, and psychological issues, the patient was admitted to palliative care in December. Through interventions such as training for the patient and their family on nutrition, aspiration, PEG care, and tracheostomy care, psychosocial support, and medication management, the patient's general condition improved, and they were discharged home at the end of November. The patient's general condition deteriorated again in March, and due to respiratory problems, the patient experienced similar symptoms once more. In March, our patient, aged 54, passed away due to a very rare form of cancer.

Assessment Based on Functional Health Patterns:

- **Health Perception and Health Management:** The patient is aware of their diagnosis and has sufficient knowledge about it. Compliance with the treatment process, medication use, and bodily changes (PEG, tracheostomy) are within acceptable limits. However, due to the loss of tongue, they perceive their health as quite poor. They experience communication and body image problems.
- **Stress Management:** It has been determined that the fear of death is a significant source of stress for the patient, and they receive the greatest support in coping from their children. The fact that they have begun to live semi-dependently on family members, as well as the anxiety of staying in the hospital for a long time and being a burden on family members, increases the individual's anxiety level.
- **Nutrition and Metabolic Status:** Due to the absence of the tongue as a result of glossectomy, the patient has lost the ability to swallow and is fed enterally via PEG. The patient, who experienced significant weight loss during the treatment process, is fed with 1600 ml of enteral product per day.
- **Elimination:** Bowel and bladder habits are normal, a Foley catheter is in place. The patient uses diapers. The patient has been monitored for constipation risk.
- **Activity and Exercise:** Due to fatigue and changes in body image, the patient is reluctant to get out of bed. The patient spends the entire day in bed. VAS fatigue level is 10.
- **Sleep and Rest:** The patient's sleep pattern is disrupted due to increased secretions and abdominal pain related to the tracheostomy (5-6 hours of interrupted sleep per night). The patient is taking antidepressants.
- **Cognitive and Sensory Perception:** Due to language loss, there is a loss of taste, and problems with eating,

smelling, and other cognitive perceptions. Unable to communicate verbally due to tracheostomy, the patient expresses her needs through writing or sign language.

- **Self-Perception:** Due to language loss, the patient does not want to communicate with healthcare personnel, family members, and visitors because of changes in her body image. She has significant difficulty communicating. The dependence on family members and caregivers for both feeding and breathing has damaged her self-esteem.
- **Roles and Relationships:** She experiences distress due to changes in her body image (tracheostomy, PEG, and surgical scars). She has role loss anxiety due to the thought of "not being a good mother." Her roles as mother, wife, and others are severely affected. Our patient has undergone a long hospitalization period.
- **Sexuality and Reproduction:** No questions were asked about her sexual life.
- **Values and Beliefs:** The patient stated that she is a Muslim and that prayer plays an important role in her coping process. However, he stated that he had difficulty performing prayers due to physical or health-related reasons. His significant fear of death indicates that the individual has a high level of need for psychosocial support.

SYSTEMIC ASSESSMENT

- **Respiratory System:** Difficulty breathing, Class 3 Dyspnea, Patient has tracheostomy, excessive respiratory secretions are aspirated. Receives oxygen therapy via T-tube at 3-4 lt/min. Cough and sputum are present.
- **Cardiovascular System:** Heart sounds are normal, heart rate is regular, peripheral pulses are palpable, no cyanosis, no edema
- **Gastrointestinal System:** Radical glossectomy, No oral intake due to tongue loss, feeding problems present, PEG tube in the abdominal area.
- **Musculoskeletal System:** The patient is bedridden but can mobilize with assistance. Due to ICU immobilization, muscle pain, weakness, and muscle loss are present. Skin care is provided; PEG and tracheostomy sites are regularly managed. Psychosocially, the patient feels depressed, sad, and stressed, uses antidepressants, and reports difficulty coping and fear of death related to illness.
- **Neurological System:** Conscious, cooperative, oriented

NURSING CARE

A comprehensive nursing care plan was implemented for a patient (12.11.2025) with radical glossectomy, tracheostomy, and PEG feeding, focusing on nutrition, pain management, psychological support, and communication impairment.

The patient showed severe malnutrition risk due to inability to take oral intake (albumin: 2.7 g/dL). Enteral nutrition via PEG was provided under dietitian guidance with strict infection control, proper positioning (30–45°), and tube flushing protocols. The patient tolerated feeding without gastric residuals.

Table 1. Patient's Treatment Protocol

Medication	Dose	Route of Administration	Time	Reason for Use
Pandev 40 mg ampoule	1x1	Intravenous	12:00	Proton pump inhibitor
Prednol 40 mg ampoule	1x1	Intravenous	12:00	Corticosteroid
Ipravent 0.5 mg nebulizer	4x1	Nebulizer	12:00, 18:00, 24:00, 06:00	Bronchodilator
Levaton 125 mg tablet	1x1	Via PEG	06:00	Hypothyroidism
Cipralax 10 mg tablet	1x1	Via PEG	22:00	Antidepressant
Contramal 100 mg ampoule	2x1	Intravenous	12:00, 24:00	Weak opioid
Meronem 1 g vial	3x1	Intravenous	14:00, 22:00, 06:00	Antibiotic
Flukanazol 200 ml infusion	1x1	Intravenous	12:00	Antifungal
Asist ampoule	3x1	Intravenous	14:00, 22:00, 06:00	Expectorant

The patient experienced severe pain (VAS 10) related to surgery and tumor burden. Regular pain assessment, opioid administration (Contramal), and non-pharmacological methods such as breathing exercises were applied. Pain management education was provided to the patient and family.

Due to radical surgery, tracheostomy, and inability to speak, the patient had impaired verbal communication and difficulty coping. Alternative communication methods (writing boards, signals) were used, and emotional support was provided. Psychological consultation, physiotherapy involvement, and relaxation techniques were implemented to reduce anxiety and improve coping.

The patient also showed significant communication impairment due to loss of speech. Structured communication strategies, tracheostomy care, airway monitoring, and reassurance were provided. The patient was able to express needs through non-verbal methods and showed improved emotional connection with healthcare staff.

Overall, nursing interventions focused on maintaining nutrition, controlling pain, supporting psychological adaptation, and improving communication safety and effectiveness.

DISCUSSION

Cancer of the tongue base is one of the most difficult areas for surgical intervention due to its anatomical location. The literature indicates that shortness of breath, difficulty swallowing, and pain are the most significant factors affecting the quality of life in patients with advanced head and neck cancer. Although the treatment process involves combinations of surgery, radiotherapy, and chemotherapy, palliative care plays a vital role in maintaining the patient's quality of life in advanced cases. Patients with complete or partial loss of the tongue, along with speech disorders, feeding problems, respiratory difficulties, and inability to communicate, stand out as a patient group with a high need for palliative care. Furthermore, communication problems between the patient and family, the caregiving process, and the complete disruption of the family dynamics related to the disease are also significant issues.

The deterioration and weakening of the organs occur more rapidly and frequently compared to other types of cancer. The patient's quality of life can be significantly poor due to organ loss, anxiety, depression, insomnia, and other psychological problems, as well as the impact on their social and family life. For all these reasons, it is crucial for the patient to receive palliative care and have their needs met. In this case, tracheostomy to protect the airway and PEG for nutritional support became necessary. With a multidisciplinary approach, a fundamental principle of palliative care, this case went beyond the physical symptoms. The patient's strong bond with their children and high family support increased their psychological resilience in the terminal phase. In addition to psychological support, antidepressants were initiated. Studies show that patients feel safer and experience less fear of death in palliative care processes where family participation is ensured. Furthermore, alternative communication methods (whiteboard use, written communication methods, sign language, etc.) provided to the patient, who was unable to communicate due to the tracheostomy, helped maintain their autonomy.

CONCLUSION

The symptoms of the patient named M.G. were stabilized during the palliative care process, and discharge for home care was planned for November 21, 2025. Prior to discharge, practical training was provided to the patient's relatives on PEG care, tracheostomy aspiration, dressing techniques, and procedures to be followed in emergency situations. In this case of tongue base cancer, which resulted in the loss of the tongue, early admission to palliative care is a process that empowers both the patient and their relatives and ensures that the patient spends their final days peacefully.

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A Systematic Review of Graduate Theses in Nursing on Patients Undergoing Hematopoietic Stem Cell Transplantation in Türkiye

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Objective: This study aims to examine postgraduate nursing theses conducted in Türkiye by evaluating the psychosocial status of patients undergoing stem cell transplantation, the effects of evidence-based nursing interventions, and patient-related problems from a holistic perspective.

Materials-Methods: This systematic review was conducted in accordance with PRISMA guidelines. The literature search was performed in the Council of Higher Education (YÖK) National Thesis Center database between April 2 and 10, 2026. The review aimed to answer the following research questions: (1) What are the main research topics addressed in postgraduate nursing theses on stem cell transplantation? and (2) What are the key findings regarding nursing care during the transplantation process? Eligibility criteria were determined according to the PEOS framework. Studies conducted with pediatric patients, pregnant individuals, and students, as well as duplicate records, non-Turkish theses, and medical studies, were excluded. Using the keywords "stem cell" and "stem cell transplantation," 1,465 records were identified. After limiting the search to the nursing field, 35 studies remained, and 28 theses meeting the inclusion criteria were included in the review. Data were extracted using a structured form covering study characteristics, participant profiles, research designs, measurement tools, intervention details, and outcomes.

Results: Most postgraduate nursing theses on stem cell transplantation in Türkiye were descriptive, although intervention studies have increased in recent years. Interventions focused on education-based programs, mobile follow-up, and breathing exercises. These interventions were effective in symptom management, particularly in reducing nausea, vomiting, and sleep problems. Evidence-based practices related to central catheter care showed positive outcomes for both patients and nurses. Descriptive studies addressed the care process in physical, psychological, and social dimensions, revealing that patients commonly experienced fatigue, anxiety, nausea-vomiting, and social isolation.

Conclusion(s): The findings are consistent with current international literature. Chen et al. (2024) reported fatigue and insomnia after transplantation and emphasized the importance of education and social support. Similarly, Ortola-Alonsa et al. (2024) highlighted that continuous follow-up and evidence-based nursing care improve coping. This review demonstrates that care for patients undergoing stem cell transplantation should be addressed holistically. Evidence-based nursing interventions improve patient outcomes and play a critical role in care. Future research should focus on intervention-based designs, expanding digital monitoring systems, and strengthening the literature through nursing-led studies.

Keywords: Stem cell, stem cell transplantation, systematic review, nursing

INTRODUCTION

Hematopoietic stem cell transplantation is a treatment method that aims to restore hematopoiesis by replacing the patient's damaged or dysfunctional bone marrow or immune system with healthy hematopoietic stem cells (National Cancer Institute [NCI], 2023; Khaddour et al., 2023). Hematopoietic stem cell transplantation is an important and complex treatment method. Therefore, it is not limited only to the transplantation procedure

itself; rather, it includes a challenging process involving the conditioning regimen, chemotherapy-related side effects, risk of infection, isolation period, long-term follow-up, and post-transplant home care needs. During this challenging process, patients may experience many physical, psychological, social, and economic problems. Providing psychosocial support, regularly monitoring symptoms, meeting educational needs, involving caregivers in the process, and implementing evidence-based nursing interventions are of great importance. Current literature also emphasizes the important role of nursing care in patient education, symptom management, safe care practices, and post-discharge support (Kenyon & Murray, 2024; Polomeni et al., 2024). In this respect, the problems experienced by patients undergoing hematopoietic stem cell transplantation should be addressed holistically in both the pre- and post-transplant periods. Focusing only on physical symptoms is not sufficient. The EBMT Handbook emphasizes that hematopoietic cell transplantation nursing encompasses many stages throughout the patient's transplant journey and that nurses play an important role in improving the patient experience. Nursing care has an important place in this process. Nurses assume responsibilities in many areas, including symptom monitoring, infection prevention, patient education, central venous catheter care, discharge planning, psychosocial support, and preparing caregivers for the process. Therefore, nursing care for patients undergoing stem cell transplantation is not limited only to the management of physical symptoms. Determining patients' educational needs, improving self-care skills, supporting caregivers, and reflecting evidence-based practices in the care process are also important.

The aim of this study was to examine master's and doctoral theses conducted in the field of nursing in order to evaluate, from a holistic perspective, the psychosocial status of patients undergoing stem cell transplantation in Türkiye, the effects of evidence-based nursing interventions applied during the care process, and the problems experienced by these patients.

MATERIALS AND METHOD

This study was conducted as a systematic review in accordance with the PRISMA guidelines. As a result of a systematic literature search conducted in the Council of Higher Education National Thesis Center database between April 2 and April 10, 2026, 28 theses that met the predetermined criteria were included in the study.

Research Questions

- What are the main research topics addressed in postgraduate theses conducted in the field of nursing on stem cell transplantation?
- What are the prominent findings related to nursing care in the stem cell transplantation process?

Inclusion Criteria

The studies included in this review met the following criteria:

- Adult patients undergoing stem cell transplantation in Türkiye and their caregivers
- Nursing care practices and nursing interventions
- Quality of life, symptom management, psychosocial status, and care needs
- Master's and doctoral theses conducted in Türkiye and written in Turkish

Exclusion Criteria

Studies conducted with pediatric patients, pregnant women, and students; duplicate studies; theses written in languages other than Turkish; and medical studies were excluded.

Search Strategy

The literature search was conducted in the Council of Higher Education National Thesis Center database between April 2 and April 10, 2026. The keywords "stem cell," "stem cell transplantation," and "nurse" were used during the search process. In the initial search, 1,465 studies were identified. When the search was limited to the field of nursing, 35 studies were determined. After evaluation according to the inclusion and exclusion criteria, a total of 28 theses were included in the study.

Data Extraction

The data extraction tool was created manually by the researcher. This tool included information such as the year of the study, research design, participant characteristics including sample size, age, and gender, measurement tools used, intervention details including type, frequency, and duration, evaluation time, and study results.

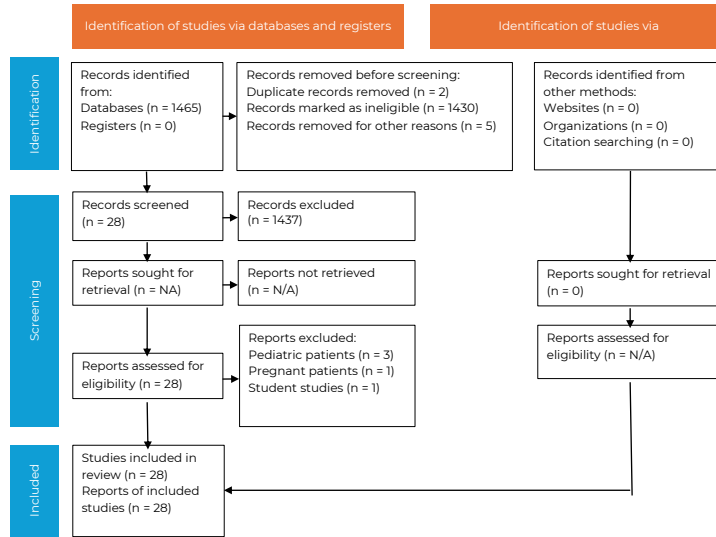


Figure 1. PRISMA Flow Diagram for the Identification and Selection of Studies Included in the Systematic Review

FINDINGS

When 28 postgraduate studies conducted in the field of nursing on stem cell transplantation in Türkiye were examined, it was observed that the majority were descriptive studies and that intervention-based studies have increased in recent years. Intervention studies were found to focus on education-based interventions, mobile application-supported follow-up, and breathing exercises. These interventions were effective in symptom management and contributed particularly to reducing side effects such as nausea and vomiting and sleep problems. It was also determined that evidence-based practices for central catheter care provided positive outcomes for both patients and nurses.

In descriptive studies, it was observed that the care process of patients planned for stem cell transplantation was evaluated in the pre-transplant and post-transplant periods and addressed in terms of physical, social, psychological, and economic aspects. It was determined that patients most commonly experienced fatigue, anxiety, nausea and vomiting, and social isolation due to the treatment process. Patients' educational levels and the social support they received contributed to their ability to manage this process more effectively. Overall, the studies examined show that nursing interventions have positive effects on patients' care processes.

DISCUSSION

The theses examined in this study addressed the care process of patients in terms of physical symptoms, psychosocial effects, social support, quality of life, and evidence-based nursing interventions, covering the pre-transplant period, post-transplant period, and post-discharge home follow-up. In this respect, the findings of this study are largely consistent with current international literature.

In the study by Yu et al. (2024), patients undergoing hematopoietic stem cell transplantation were reported to experience multiple and complex symptoms after discharge from the hospital, and symptom self-management remained challenging. It was determined that educational level and social support systems made the process more manageable. In addition, the prominent problems identified in this review, such as fatigue, sleep problems, nausea, and vomiting, are consistent with those findings.

In the study by Ortolá-Alonso et al. (2024), it was determined that patients needed continuous follow-up and support, and that a comprehensive approach and evidence-based nursing care positively affected effective coping methods.

Çetin Üçeriz and Bağcıvan (2025) found that symptom management is an important area in nursing care and that there has been increasing interest in this topic in the literature. This finding is similar to the increase in intervention-based studies conducted in Türkiye in recent years.

Table 1. Systematic Review of Postgraduate and Doctoral Theses Conducted on Patients Undergoing Stem Cell Transplantation in Türkiye

Author (Year)	Sample	Intervention / Initiative	Evaluation	Main Results
Atakul (2025)	36 (17 IG, 19 CG)	Web-based prehabilitation training before hospitalization; control received written information.	Admission day, transplant day, discharge.	Higher quality of life at discharge in the intervention group. Fatigue, nausea, pain, sadness, anxiety, and insomnia were reduced. No difference in social/family well-being.
Pörücü (2025)	60 (30 IG, 30 CG)	CVC care protocol; control received routine care.	Daily follow-up; measurements on days 8 and 14.	Reduced redness, exudate, discharge, and fever-like symptoms at the catheter site. No difference in bloodstream infection rates. Nurses reported reduced workload.
Genç (2024)	70 (35 IG, 35 CG)	Breathing exercise training; control received standard care.	Daily assessment for 14 days.	Increased breathing exercises were associated with lower nausea and vomiting, reduced antiemetic use, and improved food intake.
Gül (2023)	80	Descriptive study (no intervention).	≥2 months after transplantation.	Quality of life was associated with education, income, and marital status. Fatigue and anxiety were common. Main educational needs were infection control and medication side effects.
Başçı (2023)	36 (18 IG, 18 CG)	Mobile application-based education and follow-up with WhatsApp support; control received standard care.	Baseline, 1st month, and 3rd month post-transplant.	Significant improvement only in the spiritual/religious domain at 3 months. No significant effect on supportive care needs, distress, or overall quality of life.
Noyan (2022)	126	Descriptive study examining fatigue, insomnia, depression, anxiety, and stress.	≥1 month after transplantation.	Fatigue (94%) was the most common symptom, followed by anxiety (52%), insomnia/depression (47%), and stress (34%). Symptoms were moderately correlated; insomnia contributed to fatigue and psychological distress.
İbrahimoğlu (2022)	64	Descriptive study evaluating perceived social support and coping styles before transplantation.	Pre-transplant hospitalization period.	Social support was mainly perceived from a significant other. Greater family support was associated with more optimistic coping. Increasing age was linked to lower support-seeking behavior.
Kurt (2022)	76	Descriptive study assessing healthy lifestyle behaviors and quality of life.	≥6 months after transplantation.	Healthy lifestyle behaviors and quality of life were moderate. Higher education and absence of radiotherapy were associated with healthier behaviors, while employment and absence of complications improved physical quality of life.
Öztürk (2022)	50	Descriptive study examining coping styles and psychological symptoms before and after transplantation.	Pre- and post-transplant assessments.	After transplantation, self-confidence and social support-seeking increased, while psychological symptoms (anxiety, somatization, obsessive-compulsive symptoms, hostility) decreased. Male patients and those aged 35–51 reported more psychological symptoms.
Cüceoğlu (2022)	18	Descriptive study evaluating post-transplant quality of life.	Post-transplant assessment.	Overall quality of life was good. Sociodemographic characteristics were not associated with quality of life, whereas transplantation type showed a significant effect.

Table 1. Systematic Review of Postgraduate and Doctoral Theses Conducted on Patients Undergoing Stem Cell Transplantation in Türkiye (Continue)

Author (Year)	Sample	Intervention / Initiative	Evaluation	Main Results
Can (2021)	31 (16 IC, 15 CG)	Music therapy and nature sounds in addition to standard care; control received standard care only.	Before transplantation and on day 10 post-transplant.	Sleep quality improved significantly in the intervention group compared with the control group.
Tüysüz (2020)	20 (10 patients, 10 caregivers)	Qualitative phenomenological study exploring transplant experiences.	Post-transplant interviews.	Patients viewed transplantation as a last chance and experienced both hope and fear throughout the process. Caregivers perceived transplantation as salvation but reported substantial anxiety related to complications and relapse risk.
Boz (2019)	62 (31 IC, 31 CG)	Motivational interviewing-based counseling; control received routine discharge education.	Baseline and 1 month after discharge.	Motivational interviewing improved sexual experiences but had no significant effect on sexual self-efficacy or sexual self-schema.
Gökmen (2019)	103 (82 patients, 21 partners)	Descriptive study evaluating sexual function in transplant recipients and spouses.	2-4 years after transplantation.	Sexual dysfunction was common in both male and female recipients. About half of participants had never received information about sexuality, and counseling services were rarely provided.
Çalışkan (2019)	200	Descriptive study examining symptoms, coping behaviors, and quality of life after discharge.	Early post-discharge period.	The most common symptoms were pain, fatigue, and loss of appetite. Clinical and sociodemographic factors influenced symptom burden and quality of life. Patients required support for symptom management and coping.
Yılmaz (2019)	100	Descriptive study assessing cognitive function after transplantation.	Post-transplant period.	Cognitive impairment was identified in transplant recipients. Transplant type was significantly associated with several memory, attention, language, and visuospatial function domains.
Baysal (2019)	32 (16 IC, 16 CG)	Cryotherapy during chemotherapy; control received standard care.	Daily follow-up for 21 days after chemotherapy.	Oral mucositis occurred less frequently in the intervention group, but differences in incidence, severity, and duration were not statistically significant.
Bayrak (2019)	67 (30 IC, 37 CG)	Breathing exercises; control received standard care.	Daily assessment from transplantation until engraftment.	Breathing exercises reduced fatigue and increased energy levels. No significant effect was observed on pain or immune recovery.
Kurt (2018)	153	Descriptive study examining self-care agency and hopelessness.	During transplantation hospitalization.	A moderate negative relationship was found between self-care agency and hopelessness; higher self-care agency was associated with lower hopelessness.
Tiryaki (2018)	16 donors	Qualitative phenomenological study exploring psychosocial experiences of stem cell donors.	Post-donation interviews.	Donors reported psychosocial challenges related to lack of knowledge, fear, decision-making difficulties, spiritual concerns, and family changes. The findings highlighted the need for psychosocial support throughout the donation process.

Table 1. Systematic Review of Postgraduate and Doctoral Theses Conducted on Patients Undergoing Stem Cell Transplantation in Türkiye (Continue)

Author (Year)	Sample	Intervention / Initiative	Evaluation	Main Results
Ceyik (2018)	30	Music therapy (Şehnaz makam) during transplantation.	Measurements before and immediately after the intervention.	Music therapy reduced anxiety and distress levels, decreased respiratory rate, and increased oxygen saturation.
Yaşar (2016)	100	Descriptive study evaluating quality of life and care needs after transplantation.	Post-transplant assessment.	Common symptoms included sexual dysfunction, hair loss, appetite loss, taste changes, and sleep disturbances. Quality of life was moderately affected, particularly in physical, emotional, and functional well-being domains.
Deniz (2016)	123 caregivers	Descriptive study examining caregiver burden and quality of life.	Post-transplant assessment.	Caregiver burden and quality of life were influenced by patient dependency, caregiver characteristics, and economic status. Poor economic conditions were associated with higher burden and lower quality of life.
Akgül (2016)	55 caregivers	Descriptive study assessing caregiver burden and related factors.	Post-transplant assessment.	Caregiver burden was low to moderate overall. Greater caregiving responsibilities, lower income and education levels, psychological problems, and financial difficulties were associated with higher burden.
İster (2012)	94	Descriptive study examining pain beliefs after transplantation.	Post-transplant assessment.	Psychological pain beliefs were more common than organic beliefs. Marital status influenced pain beliefs, whereas sociodemographic characteristics did not significantly affect pain severity perceptions.
Oğuz (2012)	66	Descriptive study evaluating symptoms and care needs after discharge.	Post-discharge assessment.	The most common symptoms were fatigue, taste changes, and unhappiness. Sexual problems, sleep difficulties, and loss of appetite were reported as the most severe and distressing symptoms.
Karacan (2006)	60	Descriptive study assessing anxiety and depression during the transplantation process.	At admission and 30 days post-transplant.	Depression levels increased significantly by the 30th day after transplantation. Younger patients (18–30 years) had lower depression scores at admission than older age groups.
Matrak (2005)	51	Descriptive study examining physiological problems during allogeneic transplantation.	During hospitalization.	The most common problems were pain, fatigue, fever, and nausea. Symptom burden increased with longer hospitalization, and some symptoms varied according to age and sex.

In the randomized controlled study conducted by Genç et al. (2024), breathing exercises were reported to be effective in the management of chemotherapy-induced nausea and vomiting, which are among the most common side effects. This result supports the effectiveness of non-pharmacological nursing interventions in symptom management. Such interventions also highlight nurses' independent roles and demonstrate the impact of nursing care on patient outcomes.

In terms of evidence-based care protocols, this review particularly emphasized that practices related to central venous catheter care provide benefits for both patients and nurses. Since patients undergoing stem cell transplantation are at high risk for infection, the implementation of standard care protocols is important for both the prevention of complications and the standardization of nursing care. In the EBMT supportive care recommendations published by Ifversen et al. in 2021, the necessity of standard and protective practices for the prevention of infections during the hematopoietic stem cell transplantation process is emphasized.

With the development of technology, digital follow-up and mobile health applications have also become part of patient care and have gained increasing importance in current literature. In the pilot randomized study conducted by Bryant et al. (2020), an electronic symptom monitoring and reporting system was found to be feasible for symptom monitoring among hospitalized patients undergoing hematopoietic stem cell transplantation, and daily electronic reporting was reported to potentially contribute to reducing symptom burden. This result is consistent with the findings of the theses examined in this review, which indicate that mobile application-supported follow-up and post-discharge monitoring interventions support continuity of care.

CONCLUSION

This review demonstrates that the care process of patients undergoing stem cell transplantation should be addressed holistically, including physical, social, and psychological dimensions. The studies examined showed that evidence-based nursing practices have positive effects during the disease process. Nursing interventions were found to have an important role in care. Education, counseling, and follow-up processes facilitated patient adherence and increased the effectiveness of nursing care.

Overall, the findings indicate that patients undergoing stem cell transplantation have multidimensional care needs. Education, counseling, symptom monitoring, mobile health applications, breathing exercises, caregiver support, and evidence-based care protocols may stand out as nursing care practices that can be planned for this patient group.

Therefore, individualized and continuous nursing approaches should be adopted in the care of patients undergoing stem cell transplantation. In addition, future nursing studies to be conducted in Türkiye should go beyond descriptive findings and plan research evaluating the effects of evidence-based interventions on patient outcomes.

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OP - 057

Evaluation of NANDA-I Diagnoses and Interventions in Hematology-Oncology Care Plans of Nursing Students: A Retrospective Study

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Objective: Assessing students' clinical decision-making and diagnostic skills in nursing education is critical to improving the quality of care. This study was conducted to analyze the most frequently used NANDA-I diagnoses and the associated intervention patterns among nursing students in oncology and hematology clinics.

Materials-Methods: This retrospective study examined the clinical assignments of second-year students who completed the Internal Medicine Nursing course at a foundation university's Faculty of Nursing during the 2024-2025 academic year. The sample consists of nineteen care plans prepared within the scope of oncology and hematology clinical practice. Data were analyzed using descriptive statistical methods. Nursing diagnoses, diagnostic clusters, and nursing interventions were evaluated during the analysis process. All data were anonymized prior to analysis to ensure the protection of personal data.

Results: We examined 19 care plans and 149 diagnoses: 63.2% (n=12) oncology (mean age 69.6) and 36.8% (n=7) hematology (mean age 48.5). Oncology cases included gastrointestinal, lung, breast, and urogenital cancers; hematology cases included leukemia and lymphoma. The most frequent NANDA-I diagnoses were risk for infection (n=15), risk for falls (n=14), impaired oral mucous membrane/risk for impaired oral mucous membrane integrity (n=10), and risk for bleeding (n=10). Risk for infection appeared in 85.7% of hematology and 75% of oncology cases. The safety/protection domain was most used (43.6%), and role relationships least used (0.67%), with no diagnoses in the sexuality or life principles domains. Diagnostic clusters showed "risk for infection and impaired oral mucous membrane" in 71.4% of hematology patients, and "risk for falls and impaired skin integrity/risk for impaired skin integrity" in 58.3% of oncology patients. Primary interventions were vital sign monitoring, infection control, and providing a safe environment.

Conclusion(s): It was determined that students focused predominantly on physical diagnoses in hematology and oncology clinics and remained quite limited in the psychosocial domain. This situation indicates that holistic assessment is inadequate in terms of functional health patterns. Future studies with larger populations and the strengthening of a holistic approach in education are recommended.

Keywords: oncology nursing, patient care planning, nursing

OP - 058

The Effect of Children's Needs and Emotional Manifestations on Parental Stress in Hospitalized School-Age Children with Cancer

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Objective: This study was conducted to examine the effect of the needs and emotional manifestations of hospitalized school-age children diagnosed with cancer on parental stress.

Materials-Methods: The study was conducted using a descriptive, correlational, and cross-sectional design. The sample consisted of 120 children aged 6–12 years who were hospitalized in the hematology-oncology clinic of a university hospital and their parents. Data were collected using a sociodemographic data form, the Needs of Children Questionnaire (NCQ), the Children's Emotional Manifestation Scale (CEMS), and the Parenting Stress Index (PSI). Data were analyzed using descriptive statistics, reliability analyses, Spearman correlation analysis, and multiple linear regression analysis.

Results: The mean scores were as follows: 14.64±5.13 for emotional manifestation, 26.64±3.43 for importance of needs, 26.72±4.35 for fulfillment of needs, and 76.96±18.65 for parental stress. Spearman correlation analysis revealed significant negative correlations between parental stress and emotional manifestation ($r = -0.325$, $p < 0.001$), importance of needs ($r = -0.431$, $p < 0.001$), and fulfillment of needs ($r = -0.815$, $p < 0.001$). Multiple linear regression analysis indicated that the model was statistically significant ($R^2 = 0.759$, $p < 0.001$) and explained 75.9% of the variance in parental stress. Fulfillment of needs was identified as the strongest predictor of parental stress ($\beta = -0.788$, $p < 0.001$), while importance of needs made a significant contribution ($\beta = -0.113$, $p = 0.032$). Emotional manifestation did not significantly predict parental stress ($p > 0.05$).

Conclusion(s): The fulfillment of the needs of hospitalized school-age children was found to be the strongest determinant in reducing parental stress. Meeting children's needs through a holistic approach plays a critical role in supporting the psychological well-being of parents. These findings highlight the importance of family-centered and holistic care approaches in pediatric oncology settings.

Keywords: Child, emotional manifestation, neoplasms, needs, parental stress



OP - 059

Determination of educational needs of nurses working in adult oncology units

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Objective: Oncology nursing is a specialized field that plays a critical role throughout all stages of the cancer care process. This study was conducted to determine the educational needs of nurses working in adult oncology units.

Materials-Methods: This study was conducted using a descriptive, cross-sectional design. The study population consisted of oncology nurses working in training and research hospitals, university hospitals, and city hospitals in Istanbul. A total of 126 nurses who agreed to participate and were accessible during the data collection period were included in the sample. Data were collected using a Descriptive Information Form and an Educational Needs Assessment Form. Descriptive statistics, independent samples t-test, and one-way analysis of variance (ANOVA) were used for data analysis.

Results: The mean age of the nurses was 31.67 ± 6.70 years, and the majority were female and held a bachelor's degree. More than half of the participants worked in training and research hospitals, and a considerable proportion had not chosen their unit voluntarily. Most nurses reported that the education they had received was insufficient and indicated a need for specialized training programs. The highest educational need was identified in chemotherapy drug administration (84.9%). According to the educational needs structured based on the European Oncology Nursing Society (EONS) training modules, the greatest needs were found in theoretical knowledge and professional training areas. Significant differences were identified between educational needs scores and variables such as professional experience, perceived adequacy of education, and participation in in-service training.

Conclusion(s): Systematic identification of the educational needs of nurses working in adult oncology units is essential for developing need-based and sustainable training programs. Accordingly, it is recommended to design module-based and evidence-based in-service training programs.

Keywords: Education need, oncology nurse, professional training

OP - 060

Experiences and Supportive Care Needs of Women with Breast Cancer Receiving Targeted Therapy: A Qualitative Study

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Objective: Targeted therapies have gained significant importance in breast cancer treatment in recent years. However, parallel to this increase in treatment success, the symptoms experienced by patients during the treatment process and the impact of these symptoms on daily life are becoming increasingly important. This study aims to in-depth examine the experiences and supportive care needs of women with breast cancer who are receiving targeted therapy.

Materials-Methods: This qualitative research was conducted with a total of 21 women with breast cancer who are receiving targeted therapy at the Chemotherapy Unit of Akdeniz University. In-depth individual interviews were conducted between March and April 2026 using a semi-structured interview form. The MAX-QDA program was used for data analysis. The study was reported according to the criteria included in the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist.

Results: Four main themes revealing women's experiences and supportive care needs were identified in the study. This qualitative study, based on these four main themes, provides comprehensive data that allows us to better understand the experiences, coping strategies, and supportive care needs of women with breast cancer who are receiving targeted therapy.

Conclusion(s): The study found that women with breast cancer who are receiving targeted therapy experienced ambivalent feelings about the long treatment process, faced challenges due to changes in their social roles, experienced multiple symptoms, and developed different coping strategies. Furthermore, it was determined that these women had multifaceted supportive care needs.

Keywords: Experiences, supportive care needs, targeted therapy, qualitative study, breast cancer



OP - 061

Examination of Digital Media Use in Patients Receiving Chemotherapy

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Objective: For individuals diagnosed with cancer, the chemotherapy process represents not only a physically demanding period but also a significant psychosocial challenge. During this time, patients increasingly turn to digital media and online resources to reduce uncertainties related to their disease and treatment. While the widespread availability of digital health information supports patients' active involvement in healthcare decision-making, it also introduces the risk of exposure to inaccurate or unreliable information. In this context, eHealth literacy plays a critical role, defined as the ability to access, evaluate, and effectively use health information obtained from digital environments. This study was conducted to examine the levels of digital media use and eHealth literacy among patients undergoing chemotherapy.

Materials-Methods: This descriptive and cross-sectional study was conducted between December 2025 and March 2026 in the chemotherapy unit of a private hospital in Istanbul. The sample consisted of 81 patients aged 18–65 years who were selected using a simple random sampling method. Data were collected using the Sociodemographic Information Form and the eHealth Literacy Scale (eHEALS). Descriptive statistics and factor analysis were used for data analysis.

Results: Of the participants, 60.5% were female and 65.4% were under the age of 50. It was found that 67% of the patients regularly used the internet to obtain health-related information. While 56.8% of the participants reported a high level of trust in online health information, 77.8% stated that they used this information in their treatment process. However, 43.2% of the participants reported that they were unsure about their ability to distinguish reliable health information sources. Analysis of eHealth literacy items revealed that participants were generally sufficient in accessing and using information but had limitations in evaluating the reliability of information.

Conclusion(s): Digital media use is widespread among patients receiving chemotherapy, and patients actively use online health information in their treatment processes. However, insufficient ability to evaluate the reliability of information may pose clinical risks. Therefore, improving patients' eHealth literacy and guiding them toward reliable digital resources are recommended.

Keywords: chemotherapy, digital media, eHealth literacy, internet use, patient education



OP - 062

Effectiveness of the PedOncoNurs Web-Based Training Module for Sustainable Education of Pediatric Oncology Nurses: A RCT Protocol

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Objective: This study aims to develop and evaluate the effectiveness of the PedOncoNurs web-based educational module in supporting the ongoing education of pediatric oncology nurses across diverse clinical settings.

Materials-Methods: This prospective, randomized controlled pre-test–post-test trial will be conducted in secondary and tertiary pediatric oncology units in Türkiye. A total of 104 pediatric oncology nurses will be randomly assigned (1:1) to either the intervention or control group. Eligible participants must have at least six months of pediatric oncology nursing experience and provide informed consent. The intervention group will receive six-month access to the PedOncoNurs web-based educational platform, covering key competencies such as symptom management, psychosocial support, palliative care, and family-centered care, while the control group will receive no additional training. Outcomes will be assessed at baseline, 3 months, and 6 months using validated measures of educational needs, knowledge, and satisfaction. Data will be collected online and analyzed according to the intention-to-treat principle. ClinicalTrials.gov Identifier: NCT06562517.

Results: As of protocol submission, participant recruitment has not yet started, and data collection is planned to begin in January 2026. Preliminary feasibility and pilot usability testing of the PedOncoNurs platform indicated high acceptability and positive feedback from pediatric oncology nurses and educators, supporting its relevance and potential utility in clinical professional development.

Conclusion(s): This randomized controlled trial will provide robust evidence on the effectiveness of a web-based educational module in improving knowledge, meeting educational needs, and increasing satisfaction among pediatric oncology nurses. If effective, the PedOncoNurs platform may represent a scalable, cost-efficient, and sustainable model for continuing professional development with potential for wider implementation across diverse healthcare settings.

Keywords: nurse, oncology, education, sustainability, website

OP - 063

Effect of central venous catheter care education on nurses caring for pediatric oncology patients on knowledge level and infection prevention behaviors

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Objective: Central venous catheters (CVCs) are an essential component of treatment in pediatric oncology patients and represent a critical area of care in terms of infection risk. CVC-related infections increase morbidity and mortality and prolong hospital stay. Therefore, nurses' knowledge levels and infection prevention behaviors are of great importance. This study aimed to evaluate the effect of CVC care education provided to nurses caring for pediatric oncology patients on their knowledge levels and infection prevention behaviors.

Materials-Methods: This study was conducted using a quasi-experimental (pretest–posttest) design. A total of 29 nurses working in a pediatric oncology unit between February and June 2025 were included. Data were collected using a Sociodemographic Information Form, the Evidence-Based Guideline Knowledge Assessment Test for Preventing Central Venous Catheter-Related Infections, and the Nurses' Observations on Infection Control and Prevention Questionnaire. A three-stage training program consisting of theoretical, video-assisted, and mannequin-based practical training was implemented. Pre- and post-training measurements were compared. Descriptive statistics, paired samples t-test, and Wilcoxon signed-rank test were used for data analysis.

Results: The mean age of the nurses was 26.38 ± 2.39 years, and 75.9% were female. The mean CVC guideline knowledge score increased significantly from 7.21 ± 1.63 before training to 9.69 ± 0.47 after training ($t = -9.519$, $p < 0.001$), with a very large effect size (Cohen's $d = 1.405$). The mean infection control observation score decreased from 30.91 ± 3.72 to 27.48 ± 2.42 after training ($t = 8.180$, $p < 0.001$). Since lower scores indicate better performance, this result reflects a significant improvement. The effect size for this change was also very large (Cohen's $d = 1.519$).

Conclusion(s): The comprehensive CVC care education program significantly improved nurses' knowledge levels and infection prevention behaviors. Based on these findings, it is recommended that structured and regular in-service training programs be maintained in high-risk clinical settings such as pediatric oncology. Integrating educational programs into clinical practice may contribute to improving patient safety and quality of care.

Keywords: Infection control, nursing education, oncology, pediatrics, central venous catheterization

OP - 064

Effect of a messaging intervention on self-management in patients with colorectal cancer receiving oral chemotherapy

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Objective: Adherence to treatment and effective symptom management remain significant challenges in patients receiving oral chemotherapy. This study aimed to investigate the effectiveness of a messaging intervention on self-management among patients with colorectal cancer undergoing oral chemotherapy.

Materials-Methods: This study was conducted using a longitudinal randomized controlled experimental design. The research was carried out at Dokuz Eylul University Hospital and included an intervention group (n=20) and a control group (n=20). Data were collected using a Personal Information Form, the Medication Adherence Self-Efficacy Scale (MASES), and the Edmonton Symptom Assessment Scale (ESAS). Descriptive statistics and Generalized Estimating Equations (GEE) were used for data analysis.

Results: The mean age of participants was 67±11 years, and 55% were female. A significant time effect and group-by-time interaction were observed in MASES scores ($p<0.05$). In the intervention group, scores at week 9 were significantly higher than baseline and higher than those of the control group ($p=0.040$). For ESAS scores, a significant time effect was found ($p<0.05$), whereas the group-by-time interaction was not significant ($p>0.05$). Symptom scores decreased over time in both groups.

Conclusion(s): The messaging-based intervention was effective in improving patients' self-efficacy; however, its additional impact on symptom control was limited. These findings highlight the importance of digitally supported follow-up interventions in oncology nursing care.

Keywords: Colorectal neoplasms, medication adherence, messaging, self efficacy, symptom management



OP - 065

Caregiver burden in relatives of patients with breast cancer and the effectiveness of supportive interventions: a systematic review

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Objective: Breast cancer affects not only patients but also their informal caregivers, leading to significant physical, emotional, and psychological burden. Understanding caregiver burden and identifying effective interventions is essential for improving caregiver well-being. This study aimed to systematically evaluate caregiver burden among relatives of breast cancer patients and to examine the effectiveness of supportive interventions.

Materials-Methods: This systematic review was conducted in accordance with PRISMA guidelines and registered in PROSPERO (ID: 1374749). A comprehensive literature search was performed in databases including PubMed, Scopus, Web of Science, CINAHL, and Cochrane Library. A total of 34 studies were included. Data were extracted and synthesized narratively due to heterogeneity in study designs, interventions, and outcome measures.

Results: Most studies were observational, with a limited number of interventional designs. Caregiver burden was commonly measured using validated tools such as the Zarit Burden Interview (ZBI), Caregiver Burden Inventory (CBI), and Caregiver Strain Index (CSI). Findings showed that caregiver burden is influenced by multiple factors including age, gender, socioeconomic status, caregiving duration, and disease stage. Interventional studies, particularly psychoeducational and supportive programs, demonstrated reductions in caregiver burden and psychological distress.

Conclusion(s): Caregiver burden in relatives of breast cancer patients is a significant and multidimensional issue. Supportive interventions appear to be effective in reducing burden; however, further high-quality studies are needed to strengthen the evidence.

Keywords: Caregiver burden, caregivers, breast cancer, intervention, systematic review



OP - 066

The Effect of Women's Awareness of Breast and Gynecological Cancers on Their Attitudes Toward Screening

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Objective: Breast and gynecological cancers are among the leading causes of morbidity and mortality in women and can largely be prevented or controlled through early detection. Increasing awareness of these cancers is one of the key determinants that directly influences early healthcare-seeking behaviors, regular screening practices, and health outcomes. This study aimed to determine the effect of women's awareness levels of breast and gynecological cancers on their attitudes toward cancer screening.

Materials-Methods: This descriptive study was conducted with 350 women aged 18 years older. Data were collected using the "Participant Identification Form," "Breast Cancer Awareness Scale," "Gynecological Cancers Awareness Scale," and "Attitude Toward Cancer Screening Scale." The data were analyzed using the SPSS 23.0 package program. Independent samples t-test and Pearson correlation analysis were used for the data analysis.

Results: The mean age of the women was 32.5±8.8 years. The mean total scores were 11±0.7 for the Breast Cancer Awareness Scale, 149.6±28.5 for the Gynecological Cancers Awareness Scale, and 30.4±10.1 for the Attitude Toward Cancer Screening Scale. A statistically significant positive correlation was found between the total scores of the Breast Cancer Awareness Scale and the Gynecological Cancers Awareness Scale ($p<0.001$). A statistically significant negative correlation was found between the Breast Cancer Awareness Scale and Gynecological Cancers Awareness Scale total scores and the Attitude Toward Cancer Screening Scale total score ($p<0.001$).

Conclusion(s): As women's awareness of breast cancer increases, their awareness of gynecological cancers also increases. Additionally, as awareness of breast and gynecological cancers increases, positive attitudes toward cancer screening improve. It is recommended to expand comprehensive awareness education programs that address both breast and gynecological cancers together for women.

Keywords: Breast cancer, gynecological cancer, nurse, screening

Advanced Gastric Cancer and Nursing Care: A Case Report

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Objective: Gastric cancer is the fifth most commonly diagnosed cancer worldwide and the fifth leading cause of cancer-related deaths¹. Due to the absence of specific symptoms in the early stages, the vast majority of patients are diagnosed at an advanced stage². This leads to limited treatment options and a worsening prognosis³. The aim of this study is to present the nursing care of a patient diagnosed with advanced gastric cancer.

Case Report: Patient S.A. had a 25-year history of Type 2 diabetes mellitus, hypertension, and chronic arterial disease. The patient presented with complaints of abdominal and epigastric pain. Endoscopy and biopsy confirmed a diagnosis of gastric adenocarcinoma. PET and abdominal CT scans revealed extensive peritoneal carcinomatosis with multiple soft tissue lesions and significant ascites. Ascites was present in all abdominal quadrants, with a maximum diameter of 17 cm. Chest CT and pulmonary angiography demonstrated filling defects in the right lower and middle lobe pulmonary branches consistent with thrombus formation and findings compatible with lung metastasis. The patient was admitted to the emergency department on March 3, 2026, with dyspnea, cough, sputum, fatigue, hematemesis, fever, and abdominal pain. Blood and urine cultures revealed E. coli growth, and appropriate antibiotic therapy was initiated. Following respiratory deterioration, the patient was admitted to the surgical intensive care unit. Although clinical improvement was initially achieved, the patient's condition worsened again, SpO₂ decreased to 80%, and the patient was re-admitted to ICU and intubated due to acute respiratory failure. A permanent paracentesis catheter was placed for ascites management, and approximately 1500 mL of fluid was drained daily. Oral intake was discontinued due to tumor-related obstruction, and Total Parenteral Nutrition was initiated. Percutaneous endoscopic gastrostomy (PEG) was recommended but declined by the family with the statement that the patient should not suffer further. The patient exhibited dyspnea, pain, fatigue, edema, fluid overload, insomnia, anxiety, and depressive symptoms. Nursing diagnoses included impaired gas exchange, ineffective breathing pattern, pain, activity intolerance, ineffective coping, sleep disturbance, and fluid volume excess. Nursing interventions provided partial symptom relief.

Conclusion(s): Gastric cancer is an aggressive disease with late presentation¹. Although lung metastasis is rare, it is associated with poor prognosis and limited survival⁴⁵. When curative treatment is no longer possible, nursing care focuses on symptom relief, comfort, dignity, and quality of life at the end of life. This case highlights the essential role of nursing in palliative care.

Keywords: Gastric cancer, lung metastasis, nursing care, symptom management

INTRODUCTION

Despite a decrease in cancer incidence and mortality rates in recent years, gastric cancer remains a major health problem worldwide. Gastric cancer is the fifth most common cancer globally and the fifth leading cause of cancer-related deaths (Bray et al., 2024). The absence of specific symptoms in the early stages leads to the diagnosis of the vast majority of patients at an advanced stage (Guan et al., 2023). This results in limited

treatment options and a worse prognosis (Kong et al., 2012). Globally, gastric cancer incidence and mortality are associated with increasing age and are relatively rare in individuals under 45 years of age in both sexes. Gastric cancer is a multifactorial disease involving both lifestyle and environmental risk factors.

Helicobacter pylori (*H. pylori*) infection, low socioeconomic status, high intake of salty and smoked foods, dietary factors such as low fruit and vegetable consumption, fiber intake in addition to tobacco use, alcohol consumption, low physical activity, obesity, radiation, gastroesophageal reflux disease, family history and hereditary predisposition. However, the etiology of stomach cancer is not yet sufficiently elucidated (Ilıc M et al., 2022).

Peritoneal carcinomatosis and ascites are frequently observed in metastatic gastric cancer and are important clinical findings indicating disease progression. Lung metastasis, while rare in gastric cancer, is associated with a poor prognosis (Kong et al., 2012; Dong et al., 2024). In patients with advanced stage cancer, treatment is mostly palliative, with a focus on symptom control and improving quality of life. In this process, nursing care plays a critical role in meeting the patient's physical, psychological, and social needs.

The aim of this study is to present the nursing care applied in line with the complications that developed in a patient diagnosed with advanced stage gastric cancer, and to emphasize the importance of nursing in this process.

CASE PRESENTATION

Socio-demographic Characteristics: S.A., She is 78 years old, a housewife, and mother of 3 children. Her husband has passed away. The patient is conscious, cooperative and oriented.

Patient History: S.A. The patient has a 25-year history of Type 2 diabetes, hypertension, and chronic arterial disease. On March 3, 2026, the patient presented to the emergency department with complaints of dyspnea, cough, sputum, weakness, hematemesis, fever, and abdominal pain. All tests were taken and sent to the laboratory in the emergency department. *E. coli* growth was detected in the blood and urine cultures, and appropriate antibiotic treatment was initiated. The patient was admitted to the intensive care unit for respiratory support and transferred to the pulmonary ward after clinical improvement. However, on the same day, respiratory distress worsened again, and due to a drop in SpO₂ to 80%, the patient was readmitted to the intensive care unit and intubated.

The diagnosis of gastric adenocarcinoma was made as a result of endoscopy and biopsy. Positron Emission Tomography and abdominal Computed Tomography examinations revealed widespread soft tissue lesions consistent with peritoneal carcinomatosis and significant ascites. Ascites was observed in all abdominal quadrants, with its largest diameter measuring 17 cm. Thoracic Computed Tomography and Pulmonary Angiography showed findings consistent with filling defect due to thrombus material extending to the lower and middle lobe branches of the right lung and lung metastasis.

A permanent paracentesis catheter was placed for ascites management, and approximately 1500 cc of fluid was drained daily. Oral intake was discontinued due to tumor-related obstruction, and Total Parenteral Nutrition was initiated. The suggestion for Percutaneous Endoscopic Gastrostomy was rejected by the family on the grounds that "we do not want the patient to suffer any more."

The patient experienced pain, fatigue, fluid volume excess, edema, insomnia, anxiety, and depressive symptoms. Nursing diagnoses included: ineffective breathing pattern, ineffective airway clearance, fatigue, impaired comfort/pain, activity intolerance, insufficient nutrition beyond bodily needs, inability to cope individually, oral mucous membrane disorder, ineffective role performance, impaired skin integrity, fluid volume excess, and fear of death. Symptoms were partially controlled with the applied nursing care.

Assessment Based on Functional Health Patterns

- **Health Perception and Health Management:** He stated that he has not considered his health to be in good shape, especially in the last month. He experiences shortness of breath, pain, and inability to cope on his own.
- **Coping with Stress:** It has been determined that the fear of death is a significant source of stress for the patient, and the greatest support in coping comes from their children. The fact that they have begun to live a semi-dependent life on family members, as well as the anxiety of staying in the hospital for a long time and being a burden on family members, also increases the individual's anxiety level.

- **Nutritional and Metabolic Status:** Attempts to maintain nutrition orally. Applications include a firstline diabetic diet. Increased appetite and abdominal pain have led to insufficient nutrient intake. Daily fluid intake is approximately 750 cc. Uses dentures. Has nutritional deficiencies.
- **Elimination:** Bow and bladder habits are normal, foley catheter is in place. Patient uses diapers. Followed for risk of constipation.
- **Activity and Exercise:** Physical activity is limited due to pain and dyspnea. Fatigue and activity intolerance are significant. The patient spends the entire day in bed. VAS fatigue level is 9.
- **Sleep and Rest:** The patient's sleep pattern has been disrupted due to the intensive care environment and abdominal pain (5-6 hours of interrupted sleep per night).
- **Cognitive and Sensory Perception:** Hearing is normal upon initial admission. There are no learning difficulties. During the second intensive care admission, the patient is unconscious.
- **Self-Perception:** Experiencing fear of death, tension, and grief. Body image and self-esteem are affected due to physical changes. There is a feeling of weakened identity.
- **Roles and Relationships:** He feels inadequate in his roles due to his hospitalization. Family support is strong. His son visits him in the intensive care unit. He is involved. His communication is open, consistent, and effective. During the second intensive care period, nonverbal communication methods such as touch and eye contact were used because the patient was intubated.
- **Sexuality and Reproduction:** Could not be questioned.
- **Values and Beliefs:** The patient stated that he is devout in Islam and that prayer plays an important role in his coping process. However, he stated that he has difficulty performing prayers due to physical or health-related reasons. His significant fear of the concept of death indicates that the individual has a high level of need for psychosocial support.

SYSTEM ASSESSMENT

- **Respiratory System:** Difficult, Class 3 Dyspnea, receiving 3-4 lt/min oxygen therapy.
- **Cardiovascular System:** Heart sounds normal, irregular heart rate, peripheral pulses palpable, cyanosis present.
- **Gastrointestinal System:** Feeding problems present.
- **Musculoskeletal System:** The patient is bedridden, and due to the inability to provide active mobilization during the intensive care process, there is a risk of muscle pain, weakness, and loss.
- **Skin and Dermatological Condition:** The patient has a permanent paracentesis catheter and a Foley catheter in the abdomen.
- **Neurological System:** Unconscious. Disoriented. Communication could not be established during the second intensive care admission because the patient was intubated.

Table 1. Patient's Treatment Protocol

Medication	Dose	Route of Administration	Time	Reason for Use
Pandev 40 mg ampoules	2×1	Intravenous	12:00, 24:00	Proton pump inhibitor
Tazoject 4.5 mg	3×1	Intravenous	14:00, 22:00, 06:00	Antibiotic
Tropisal Nebulizer	4×1	Nebulizer	12:00, 18:00, 24:00, 06:00	Bronchodilator
Oliclinomel N4-550E (1500 ml infusion)	1×1	Intravenous	12:00	Total parenteral nutrition
Novamix FlexPen (30 units)	1×1	Subcutaneous	22:00	Antidiabetic
Contramal 100 mg	2×1	Intravenous	12:00, 24:00	Opioid analgesic
Parol flakon 100 mg	2×1	Intravenous	12:00, 24:00	Paracetamol
%5 Dextrose + 0.45% Sodium Chloride (500 cc)	1×1	Intravenous	12:00	Hydration
Fresh Frozen Plasma (1 unit)	1×1	Intravenous	11:00	Blood product

NURSING CARE

The patient with advanced gastric cancer and lung metastasis presented with severe fatigue, malnutrition, pain, and impaired coping ability.

- **Fatigue management:** The patient had high fatigue (VAS 9), dyspnea, hypoxia, and anemia. Interventions included fatigue assessment, passive ROM exercises, energy conservation strategies, activity planning, and monitoring of Hb/Hct. Fatigue decreased slightly to VAS 7, so the goal was partially achieved.
- **Nutrition management:** The patient showed signs of undernutrition related to mucositis, anorexia, and respiratory distress. Nutritional status was monitored, oral intake was supported when possible, dietitian consultation was provided, and total parenteral nutrition was administered. Nutritional support was maintained successfully.
- **Pain management:** The patient experienced severe pain (VAS 8) in multiple regions. Pain was assessed regularly, positioning and comfort measures were applied, and analgesics (Contramal and Parol) were administered. Pain reduced to VAS 4, indicating partial effectiveness of treatment.
- **Psychosocial support:** The patient and family experienced anxiety, sleep problems, and difficulty coping due to prolonged illness and respiratory dependence. Clear communication, psychological support, relaxation techniques, and non-verbal communication methods were used. A psychologist consultation was arranged.

Overall, nursing care focused on symptom control, nutritional support, pain relief, and psychological adaptation, with partial improvement in patient outcomes.

DISCUSSION

Advanced gastric cancer is an aggressive malignancy with a poor prognosis. In this case, the diagnosis at the metastatic stage led to rapid progression of the clinical course. Peritoneal carcinomatosis and the presence of ascites indicate an advanced stage of the disease, consistent with the literature (Dong et al., 2024).

Lung metastasis is rare in gastric cancer, but it is a significant poor prognostic factor. In the study by Kong et al. (2012), it was reported that lung metastasis significantly reduced survival in patients with metastatic gastric cancer. In this case, the presence of lung metastasis along with pulmonary embolism played a significant role in the development of respiratory failure. Infections are common in patients with advanced cancer, and immunosuppression facilitates this.

Nutritional problems are a common occurrence in advanced gastric cancer. Interruption of oral intake due to tumor-related obstruction increases the risk of malnutrition in the patient. In this case, TPN is an important supportive treatment method.

In this case, the main goal of nursing care was to control symptoms and improve the patient's quality of life. This demonstrates that psychosocial support and palliative care are as critical as physical support in advanced-stage oncology patients. The patient, who continues to experience nutritional problems, pain, and respiratory distress, continues to receive symptomatic treatment and nursing care in the intensive care unit.

Conclusion: Gastric cancer is associated with serious morbidity and mortality in patients diagnosed at an advanced stage. Complications such as lung metastasis further worsen the prognosis. When treatment is not possible, compassionate and holistic nursing care is the most powerful way to alleviate suffering and protect human dignity in the final stages of life. This case highlights the critical role of nursing care in improving quality of life, not lifespan.

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Empowering Cancer Patients Through a Culturally Adapted Question Prompt List: A Mixed-Methods Randomized Controlled Trial

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Objective: To examine the impact of a culturally adapted Question Prompt List (QPL) on the empowerment and anxiety levels of cancer patients and to strengthen patient-centered communication in oncology consultations.

Materials-Methods: An embedded mixed-methods randomized controlled trial was conducted. In the first stage, the QPL was developed based on Patient and Family Advisory Council opinions and qualitative findings. In the second stage, 96 patients were randomized into the intervention and control groups. The intervention group (n = 48) received the QPL and nurse briefing, while the control group (n = 48) received routine care. All patients were assessed using the Patient Empowerment Measure (PEM) and Hospital Anxiety and Depression Scale–Anxiety subscale (HADS-A) at baseline (T0) and after the second (T1) and third visits (T2). Quantitative data were analyzed using repeated measures analyses; qualitative data were analyzed by content analysis. Embedded integration guided the presentation and interpretation of results.

Results: Three themes emerged from the qualitative interviews: (1) patient communication and the consultation, (2) the empowered patient, and (3) feasibility and sustainability of QPL implementation. Significant time and time \times group effects were found for PEM total and all subscale scores ($F = 11.08\text{--}27.21$, all $p < .001$). Empowerment scores increased over time across all domains in the intervention group. Anxiety scores decreased over time in the intervention group ($p = .005$), with no statistically significant between-group differences. Qualitative analysis showed that the QPL improved information transfer, preparation, trust, and shared meaning-making.

Conclusion(s): The QPL empowered patients by supporting preparedness and effective participation in information sharing and decision-making. Clinical communication shifted from information delivery to a more participatory, meaning-making process.

Keywords: Health literacy, oncology nursing, patient empowerment, physician-patient relations, question prompt list



OP - 069

Nurse-Led Patient Education, Self-Management Support, and Patient Empowerment in Adult Oncology Patients: A Scoping Review of the 2020–2025 Literature

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Objective: This scoping review aimed to thematically map nurse-led, nurse-supported, or nursing-involved interventions addressing patient education, self-management support, and patient empowerment in adult oncology patients, based on studies published between 2020 and 2025. It also examined their contributions to the cognitive, emotional, and behavioral dimensions of empowerment, as well as intervention characteristics, implementation facilitators and barriers, and future research directions.

Materials-Methods: The study was conducted in accordance with the scoping review methodology of Arksey and O'Malley, Levac et al., and the Joanna Briggs Institute, and reported in line with PRISMA-ScR. The literature search was performed in the PubMed and Academic Search Ultimate databases between July 20 and 29, 2025; studies were limited to those published between January 1, 2020, and July 29, 2025, and additional search methods were applied. A total of 55 records were identified; after removing 4 duplicates, 51 studies were screened, and 24 were included following the exclusion of 3 studies with inaccessible full texts. Findings were synthesized using thematic content analysis.

Results: Of the 24 included studies, 12 involved nurse-led or nurse-supported structured interventions, 6 utilized digital health tools, and 8 employed experimental or quasi-experimental designs; as some studies fell into multiple categories, subcategory totals may exceed the overall count. These approaches improved knowledge and health literacy and were associated with better participation in decision-making, self-efficacy, and management of symptoms and treatment-related side effects. Prominent approaches included teach-back-based face-to-face education, plain-language and multilingual materials, mobile and online platforms, and telehealth. Key facilitators were clear role definitions, multidisciplinary integration, and leadership support, whereas major barriers included low health literacy, cultural inequities, time constraints, and limited digital access.

Conclusion(s): The findings indicate that nurse-led structured education and self-management support models should be positioned as core components of standard oncology care to enhance patient empowerment.

Keywords: Nursing, oncology, patient education, patient empowerment, self-management

OP - 070

Complementary and Alternative Medicine (CAM) Use and Affecting Factors in Patients Receiving Chemotherapy

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Objective: The study aims to determine the use of holistic complementary and alternative medicine treatments in patients receiving chemotherapy and to identify the factors influencing this usage.

Materials-Methods: This descriptive, cross-sectional study included 60 voluntary cancer patients (aged ≥ 18) undergoing chemotherapy between September and November 2025. Data, collected via face-to-face interviews using a researcher-created form and a CAM attitude scale, were analyzed using descriptive statistics, Mann-Whitney U, and Spearman correlation.

Results: The mean age of the patients was 55.6, 58% were female, 82% were married, 53% had a bachelor's degree, and 57% were employed. 50% of the cases were diagnosed less than a year ago, and 77% were receiving chemotherapy treatment. 47% of the patients had resorted to at least one holistic, complementary, and alternative medicine method, most often citing healing effects (32%), increased body resistance (22%), and lack of response to treatment (14%). The most frequently used methods were animal products (15%), herbal products (14%), and yoga/meditation practices (10%). The scores obtained by the patients on the complementary and alternative medicine subscale of the holistic, complementary, and alternative medicine scale ranged from 8 to 33. The mean scale score was calculated as 23.7 ± 3.95 . Scores on the 'holistic health' sub-dimension ranged from 5 to 30, with an average of 11.2 ± 2.24 points. The total score on the Holistic Complementary Alternative Medicine Scale ranged from 13 to 51, with an average score of 39.91 ± 3.17 . No significant difference was found in total scores of the Holistic Complementary Alternative Medicine Scale based on gender ($p = 0.794$). Similarly, no significant difference was found between married and single individuals based on marital status (Mann-Whitney U, $p = 0.785$). The relationship between age and total score was examined using Spearman Data Analysis, and no significant relationship was found between the two variables ($p = 0.176$). It was observed that the Holistic Complementary Alternative Medicine Scale did not show a significant difference based on age, gender, and marital status variables.

Conclusion(s): Patients appear to have positive attitudes towards holistic, complementary, and alternative medicine. It is important to inquire about whether patients have used these methods during the process of taking their medical history.

Keywords: Alternative Medicine, chemotherapy, cancer patient, integrative treatment



OP - 071

Evaluation of Artificial Intelligence Responses to Parents' Emergency Symptom Questions in Pediatric Oncology Patients

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Objective: In recent years, artificial intelligence-based chat applications have been widely used for rapid access to health information. This study was conducted to evaluate the responses provided by artificial intelligence to parents' questions regarding emergency symptoms in pediatric oncology patients in terms of accuracy, safety, clarity, and clinical appropriateness.

Materials-Methods: This cross-sectional study developed a pool of 40 questions related to common emergency symptoms encountered by parents (e.g., bleeding, vomiting, fever), based on a literature review and current clinical guidelines. Content validity was established through expert opinions from nurses working in pediatric oncology, reducing the number of questions to 17. The final questions were standardized and presented to the ChatGPT and Google Gemini models in a parent-scenario format. The responses obtained were evaluated independently by two researchers using a 1-5 scale for accuracy, safety, clarity, and clinical appropriateness. Inter-rater agreement was analyzed using the Intraclass Correlation Coefficient (ICC), and comparisons between the models were performed using the Wilcoxon signed-rank test.

Results: Inter-rater agreement was found to be good to excellent for both models (ICC: 0.78-0.96). In the comparison of ChatGPT and Google Gemini responses regarding accuracy, safety, clarity, and clinical appropriateness, ChatGPT demonstrated higher median scores across all evaluation criteria. While no statistically significant differences were found between the models in terms of accuracy, clarity, and clinical appropriateness ($p>0.05$), a borderline significant difference was observed in safety scores in favor of ChatGPT ($p=0.050$).

Conclusion(s): Both artificial intelligence models were found to generate highly appropriate responses to parents' questions. However, ChatGPT appeared to be more advantageous, particularly in terms of safety. AI-supported systems may help meet parents' information needs; however, expert guidance remains essential in clinical decision-making processes.

Keywords: Nursing, pediatric oncology, artificial intelligence

OP - 072

Psychometric Evaluation of the Artificial Intelligence Perception Scale for Cancer Patients: A Structural Equation Modeling Approach

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Objective: Artificial intelligence (AI) is increasingly integrated into oncology care, with oncology nurses playing a key role in patient education, communication, and trust in these technologies. However, AI adoption depends on patients' perceptions and acceptance influenced by nursing care, and standardized nursing-based measurement tools remain limited. This study aimed to develop and validate the Artificial Intelligence Perception Scale for Cancer Patients and evaluate its psychometric properties for use in nursing research and oncology nursing practice

Materials-Methods: A methodological, cross-sectional scale development study. The scale was developed according to established nursing research guidelines. An initial item pool was generated using the Technology Acceptance Model, literature review, and expert opinions from oncology nursing and interdisciplinary healthcare professionals. Content validity was assessed using the Davis technique and Lawshe method. Data were collected from 382 adult cancer patients receiving nursing care. Construct validity was examined using exploratory and confirmatory factor analyses. Reliability was evaluated using Cronbach's alpha, split-half reliability, and composite reliability. Structural equation modeling with bootstrapping tested the theoretical model.

Results: The final scale included 33 items across three factors: knowledge, awareness, and trust; perceived benefit; and acceptance and use tendencies. Exploratory factor analysis explained 82.37% of the total variance. Confirmatory factor analysis demonstrated good model fit (CFI = 0.99, RMSEA = 0.079, SRMR = 0.038). Internal consistency was excellent for the total scale ($\alpha = 0.986$) and subscales ($\alpha = 0.973-0.985$). Perceived benefit partially mediated the relationship between knowledge and acceptance, explaining 52% of the variance.

Conclusion(s): The scale is a valid and reliable instrument for assessing cancer patients' perceptions and acceptance of AI in oncology nursing practice. This scale provides oncology nurses and nurse researchers with a standardized tool to support nursing-led patient education, shared decision-making, and the integration of AI into patient-centered oncology nursing care.

Keywords: Artificial intelligence, oncology nursing, nursing care, cancer patients, scale development



OP - 073

The Role of Oncology Nursing in the Management of a Case of Sepsis Developing in a Patient with Relapsed Multiple Myeloma Undergoing Intensive Care: A Case Report

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Objective: Multiple myeloma (MM) is a hematologic cancer characterized by the proliferation of clonal plasma cells in the bone marrow. Various complications may arise depending on the treatment protocols administered during the course of the disease. The purpose of this case presentation is to highlight the management of sepsis and respiratory failure that developed in a patient diagnosed with relapsed MM during the intensive care process and to underscore the role of nursing care.

Case Report: A patient diagnosed with multiple myeloma and receiving pomalidomide-selinexor-dexamethasone as the most recent treatment regimen presents with increasing dyspnea, a persistent fever of 38.2°C, acute kidney injury, and respiratory failure consistent with hypercapnia. The patient was monitored in the intensive care unit under invasive ventilatory support (intubated), and oxygen support, fluid balance monitoring, and symptom management were implemented to support respiratory function. During the monitoring process, interventions aimed at maintaining respiration, preserving skin integrity, reducing the risk of infection, and ensuring patient safety were implemented as part of comprehensive nursing care. The patient remained in the intensive care unit for 17 days and received comprehensive nursing care based on the Gordon Functional Health Patterns Nursing Model, addressing 12 activities of daily living.

Conclusion(s): In patients with MM, pulmonary complications that may arise due to treatment protocols can lead to life-threatening clinical conditions. This case highlights the importance of early recognition of respiratory failure in patients with hematologic malignancies and the role of systematic nursing care in the intensive care setting.

Keywords: Nursing care, multiple myeloma, respiratory insufficiency

Digital Health Literacy in Cancer Patients and Influencing Factors: A Systematic Review

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Objective: Today, cancer patients use digital health tools such as mobile health applications and web-based platforms as a primary source of information to manage their disease and make informed decisions. Digital health literacy has emerged as a strategic competency that enhances symptom management, improves treatment adherence, and bridges the digital health divide in this process. This systematic review was conducted to systematically examine studies investigating digital health literacy and its influencing factors among cancer patients.

Materials-Methods: The study involved a search of the PubMed, Google Scholar, and YOK Thesis Center databases using the keywords “digital health literacy,” “e-health literacy,” “cancer,” “oncology,” and “nursing.” This systematic review included studies published between 2021 and 2026, with the publication language in Turkish or English, with full-text access available; conducted using digital health tools such as mobile health applications, web-based platforms, e-learning modules, and tele-nursing methods; aimed directly at improving digital health literacy among cancer patients; and evaluating the outcomes of these initiatives.

Results: As part of this systematic review, 19 studies were analyzed, including 16 with full experimental designs and 3 with quasi-experimental designs, involving a total of 1,529 participants. Based on the reviewed evidence, 14 studies focusing on mobile health applications demonstrated the effectiveness of this approach, while only one study failed to identify a significant difference. Three studies addressing tele-nursing-based interventions and a single study examining a web-based education model reported results supporting the positive outcomes of these methods.

Conclusion(s): Digital health literacy plays a significant role in the digitalizing healthcare system for cancer patients. It is recommended that nurses assess patients' digital health literacy and plan supportive interventions for groups with low literacy levels.

Keywords: Digital health literacy, neoplasms, oncology nursing, systematic review, symptom management

INTRODUCTION

Cancer is one of the leading causes of mortality worldwide, imposing a substantial physical, psychological, and social burden on patients throughout the treatment process (Ozdemir et al., 2025; Pang et al., 2025). As treatment protocols become increasingly complex, patients are expected to actively participate in managing their own care — requiring not only access to health information but also the ability to critically evaluate and apply it in digital environments. In this context, digital health literacy has emerged as a critical competency, defined as the capacity to seek, understand, and appraise health information from electronic sources and apply it to solve a health problem (Muñoz-Villaverde et al., 2024). The rapid proliferation of mobile health applications, web-based platforms, and telenursing services has transformed the way cancer patients access health information and communicate with providers, offering opportunities for real-time symptom monitoring, personalized education, and psychosocial support (Karaaslan Eser & Ayaz Alkaya, 2021; Bektas et al., 2022; Lin et al., 2023). However, patients with insufficient digital competencies risk being excluded from these benefits, thereby widening existing health inequities (Muñoz-Villaverde et al., 2024; Jiang et al., 2025).

Nurses are uniquely positioned to assess patients' digital literacy levels, facilitate appropriate tool use, and lead technology-integrated interventions (Akingbade et al., 2024; Aydin & Gürsoy, 2024). Evidence confirms that nurse-led digital interventions yield more consistent outcomes in symptom management, quality of life, and psychosocial adaptation compared to technology-only approaches (Seven et al., 2022; Vardar, 2023; Agdemir, 2024; Ozdemir et al., 2025), with theoretically grounded applications further strengthening intervention effectiveness (Çıracı Yasar, 2023; Yasar Kartal, 2025).

Despite this growing evidence, a comprehensive synthesis examining digital health literacy and its influencing factors among cancer patients remains limited. This systematic review therefore synthesizes studies published between 2021 and 2026 to inform evidence-based oncology nursing practice.

Research Questions

1. What are the methodologies used in studies on digital health literacy among cancer patients?
2. What are the key factors influencing the levels of digital health literacy among cancer patients?

METHOD

Research Design

The PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, which provide a current methodological framework, were used as the basis for conducting the study and reporting the data (Page et al., 2021).

Databases Used in the Study

In the literature search conducted within the framework of the systematic review protocol, the following digital libraries were utilized: PubMed, Google Scholar, and the Council of Higher Education Thesis Center, which provide data at both the international and national levels.

Study Population and Sample

The population of this systematic review consists of national and international publications addressing digital health literacy among cancer patients. The sample comprises studies selected in accordance with the established inclusion and exclusion criteria.

The literature search was conducted between January and March 2026 in the PubMed, Google Scholar, and YOK Thesis Center databases. The search utilized the keywords "digital health literacy," "e-health literacy," "cancer," "oncology," and "nursing" both individually and in combination using Boolean operators (and, or). In the Turkish database search, the Turkish equivalents of these terms "dijital sağlık okuryazarlığı," "e-sağlık okuryazarlığı," "kanser," and "onkoloji hemşireliği" were used.

The initial search yielded a total of 158 records from three databases (PubMed, n=46; Google Scholar, n=104; YOK Thesis Center, n=8). After removing 30 duplicate records, 128 studies were evaluated at the title and abstract level; 95 records deemed ineligible were excluded. Of the 33 studies selected for full-text review, 14 were excluded for not meeting the inclusion criteria, 8 due to unavailable full text, 4 as they were not original research, and 2 because they were not conducted directly with cancer patients.

As a result, 19 studies were included in the systematic review (Table 1). The selection process for the included studies was reported in accordance with the PRISMA 2020 flow diagram (Page et al., 2021) (Figure 1).

Inclusion and Exclusion Criteria

The PICOS framework (P: Population, I: Interventions, C: Comparisons, O: Outcomes, S: Study Designs) was utilized in establishing the inclusion criteria (Methley et al., 2014).

P-Population: Adult cancer patients undergoing active treatment, primarily chemotherapy, were included in the study without any sociodemographic restrictions. Studies that included individuals without a cancer diagnosis, caregivers, or healthcare professionals as the sample were excluded.

I-Interventions: Digital-based initiatives designed to enhance cancer patients' digital health literacy including mobile health applications, web-based educational platforms, e-learning modules, and tele-nursing applications were adopted as intervention criteria. Interventions that did not include a digital health tool and relied solely on in-person education or standard clinical care were excluded from the scope.

C–Comparisons: Studies comparing an intervention group receiving a digital health intervention with a control group continuing to receive routine or standard care were included in the scope. Single-arm studies without a comparison group were evaluated under the exclusion criteria.

O–Outcomes: Studies examining quantifiable outcomes such as digital health literacy, symptom management, quality of life, treatment adherence, self-efficacy, and psychosocial adjustment were included in the evaluation criteria. Studies that did not include measurable outcomes and instead addressed only patient experiences or perceptions using qualitative methods were excluded.

S–Study Designs: To prioritize research designs with a high level of evidence, randomized controlled trials (RCTs) and quasi-experimental studies (QES) were included in the systematic review. Studies published in Turkish or English between 2021 and 2026 with full-text access met the inclusion criteria. Conversely, review studies, case reports, qualitative studies, expert opinions, conference abstracts, thesis proposals, and studies without full-text access were excluded under the exclusion criteria.

Data Analysis

In this systematic review, a data summary form originally developed by the researcher was used during the data extraction and synthesis process. The data summary form includes, for each study: author names and publication year, research design and sample size, measurement tools used, digital health interventions applied, and the findings and results obtained. Taking into account the methodological and statistical heterogeneity among the included studies, the findings were evaluated using the narrative synthesis method (Popay et al., 2006).

Limitations of the Study

This systematic review was evaluated within the context of certain limitations, including the use of a limited number of databases in the search, the fact that it was conducted by a single researcher, and methodological heterogeneity among the studies.

FINDINGS

This systematic review analyzed 19 studies meeting the inclusion criteria, comprising 16 randomized controlled trials and 3 quasi-experimental designs, with a total of 1,521 participants. Seven of the studies were conducted in Turkey, while 12 were carried out internationally. Sample sizes ranged from 30 to 168, with the majority focusing on breast cancer patients, though gynecological, colorectal, ovarian, gastrointestinal cancers, and solid tumors were also represented. Intervention periods spanned from 4 weeks to 12 months.

Implemented Digital Interventions

Among the 19 studies reviewed, 15 utilized mobile health (mHealth) applications, 2 employed telenursing, and 1 implemented a web-based educational program. Nurse leadership emerged as a decisive element in the vast majority of these interventions, with applications offering integrated functions including symptom monitoring, side-effect management, psychosocial support, nutritional guidance, and treatment adherence.

Findings Regarding Mobile Health Applications

Of the 15 studies examining mobile application-based interventions, 12 demonstrated significant positive impact on all primary outcomes. Multiple studies reported significant improvements in symptom management, quality of life (QoL), and treatment adherence. Karaaslan Eser and Ayaz Alkaya (2021) demonstrated that six months of “OKTED” application use significantly improved oral chemotherapy adherence and symptom management ($p < 0.05$) (Karaaslan Eser & Ayaz-Alkaya, 2021). Ozturk and Kutlurkan (2021) reported that nurse-led symptom monitoring via mobile application supported symptom control and improved QoL in breast cancer patients. Cinar et al. (2021) found that a nurse-counseled application significantly enhanced QoL and reduced distress in patients receiving adjuvant endocrine therapy, while Seven et al. (2022) showed that an evidence-based non-pharmacological intervention app preserved physical functioning and alleviated depressive symptoms (Cinar et al., 2021; Seven et al., 2022).

Theoretically grounded applications yielded particularly strong outcomes. Cıracı Yaşar (2023) demonstrated that the “Nurse OREM” application, based on Orem’s Self-Care Deficit Nursing Theory, significantly improved self-care agency and overall well-being in gastrointestinal cancer inpatients ($p < 0.01$). Similarly, Yasar Kartal (2025) confirmed the effectiveness of the theory-based “Kolarektali-M” application on symptom

Table 1. Studies Investigating Digital Health Literacy and Its Influencing Factors in Cancer Patients

Author-Year	Design & Sample	Measurement Tools	Intervention	Main Findings
Karaaslan-Eser & Avaz-Alkaya (2021)	RCT; n=77 Mixed-diagnosis cancer patients on oral anticancer agents; two oncology clinics; 6-month follow-up	Oral Chemotherapy Adherence Scale (OCAS) Memorial Symptom Assessment Scale (MSAS) Assessments at weeks 4, 12, & 24	"OKTED" mobile application: monitoring, feedback, education, and recommendation content; patients were followed up via the app for 6 months; nurse-led	A statistically significant difference was found between the OCAS pre-test and follow-up scores in the intervention group (p<0.05). At the 3rd and 4th follow-ups, MSAS scores of the intervention group were significantly lower than the control group (p<0.05). The mobile application was demonstrated to be effective in improving oral chemotherapy adherence and symptom management.
Ozturek & Kutluturkan (2021)	Quasi-experimental; n=57 (pre-test-post-test) Breast cancer patients receiving chemotherapy; oncology outpatient clinics	EORTC QLQ-C30 (Quality of Life) Edmonton Symptom Assessment System (ESAS)	Nurse-led, indigenously developed mobile application-based symptom monitoring process; patients used the application to report symptoms throughout chemotherapy; nurse feedback was integrated	The mobile application-based symptom monitoring process supported symptom control and improved quality of life. Widespread use of the application in nursing practice was recommended.
Çinar et al. (2021)	RCT; n=64 (IG=31, CG=33) (pre-test-post-test) Breast cancer patients receiving adjuvant endocrine hormone therapy (EHT); 12-week follow-up	EORTC QLQ-C30 (Quality of Life) Distress Thermometer	Nurse counseling-supported, indigenously developed mobile application: content covering EHT side effects (hot flashes, headache, nausea, pain, vaginal dryness), symptom management, and coping strategies; individual counseling provided for 12 weeks	Quality of life was significantly improved in the intervention group; distress levels were significantly reduced compared to the control group. Nurse counseling supported by a mobile application was shown to be effective in managing EHT side effects.
Bektas et al. (2022)	Single-blind RCT; n=60 (IG=30, CG=30) Mixed-diagnosis cancer patients receiving systemic chemotherapy	MSAS FACT-G Self-Efficacy Scale Beck Depression Inventory (BDI) Website quality assessed with the DISCERN tool	Indigenously developed web-based educational program for cancer patients (accessible 24/7); side effect management and supportive care content delivered to patients for 12 weeks; communication with researchers was enabled through the website	The web-based educational program was found to reduce symptom burden, improve quality of life, and enhance self-efficacy. Depression scores in the intervention group decreased significantly (p<0.05). Graduated content structure and continuous access enhanced patient satisfaction. The efficacy of digital educational tools during chemotherapy was confirmed.
Seven et al. (2022)	RCT; n=40 (IG=20, CG=20); Breast cancer patients receiving chemotherapy; oncology outpatient clinics	EORTC QLQ-C30 ESAS Assessments at 1st, 3rd, and final chemotherapy cycles	TUBITAKsupported, indigenously developed mobile symptom management application (incorporating evidence-based nonpharmacological interventions); nurseled; the intervention group used the application in addition to routine care	Decline in overall health and physical functioning was significantly less pronounced in the intervention group compared to the control group. The increase in depression/sadness symptoms was significantly lower in the intervention group. The mobile application was shown to support overall well-being and physical functioning, and to alleviate depressive symptoms.
Çıracı Yaşar (2023)	Controlled experimental design; n=56 (IG=27, CG=29); Inpatients with gastrointestinal cancer; 6-wk follow-up	ESAS, EORTC QLQ-C30, Self-Care Agency Scale (SCAS), Turkish-Computer System Usability, Questionnaire Short Version (T-CSUQ-SV)	Orem's Self-Care Deficit Theory-based nurse-led mobile application: in-hospital education and home-based mobile support; 6-week intervention; routine care in control group	EORTC QLQ-C30 Symptom subscale and SCAS post-test mean scores differed significantly between groups (p<0.01) . ESAS and EORTC Functional subscale scores decreased in the intervention group; General Well-Being improved. Mobile application satisfaction was found to be high.

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Author-Year	Design & Sample	Measurement Tools	Intervention	Main Findings
Lin et al. (2023)	Multicenter RCT; n=168 (IG=84, CG=84); Gynecologic cancer patients; 24-week follow-up (assessed at baseline [T0], week 12 [T1], and week 24 [T2])	MUIS-A (Uncertainty – primary outcome), FACT-G (Quality of Life), MDASI (Symptoms), MSPSS (Social Support)	Mobile App for Gynecologic Cancer Support (MGCS): weekly topics, emotional care, discussion forum, health consultation; multidisciplinary team including nurse specialists	At week 24, uncertainty decreased significantly (p<0.001); quality of life improved significantly (p=0.04).
Vardar (2023)	Parallel, single-blind RCT; n=64 (IG=32, CG=32); Gynecologic cancer patients receiving chemotherapy; recruited via a cancer association's social media network; 8 weeks, 3 follow-ups	M.D. Anderson Symptom Inventory, Adaptation to Chronic Illness Scale, Hospital Anxiety and Depression Scale (HADS), Cancer Survivor's Concerns Assessment Scale, ECOG Performance Scale	"JineOnkolojik Destek" [Gynecologic Oncology Support] mobile application: chemotherapy side effect management, physical and psychosocial adaptation support content; 8-week duration	Symptom severity, anxiety-related concerns decreased significantly; physical, social, and psychological adaptation increased significantly (p<0.05). Delivery of care and support through mobile applications was recommended.
Ağdemir (2024)	RCT; n=84 (IG=40, CG=44); Colorectal cancer patients receiving chemotherapy in an outpatient treatment unit; over 4 chemotherapy cycles	Multidimensional Scale of Perceived Social Support, EORTC QLQ-C30 and CR29 (Quality of Life – Colorectal), Beck Anxiety Inventory, Mobile Application Effectiveness Evaluation Form	Mobile application incorporating an interactive nurse support program: content focused on symptom management, social support, and QoL; conducted during the COVID19 pandemic; control group received standard care; 4 cycles (approximately 8–12 weeks)	In the intervention group, perceived social support, symptom management, and quality of life scores increased significantly; anxiety scores decreased significantly (p<0.05). Widespread use of mobile applications in colorectal cancer patients through multidisciplinary collaboration was recommended.
Muñoz-Villaverde et al. (2024)	Quasi-experimental; n=60 (pre-test-posttest); Patients with solid tumors enrolled in clinical research	HLS-Q12 (Health Literacy Scale), HEQ (Health Empowerment Questionnaire), FACT-G Satisfaction questionnaire; assessed within the context of digital health literacy	Five synchronous teleconsultation visits conducted by an Advanced Practice Nurse (APN); treatment education, side effect management, digital guidance	A significant increase was observed in health literacy, empowerment, and quality of life (p<0.05). Both patients and healthcare professionals reported high satisfaction. APN-led digital interventions were shown to contribute to patient empowerment during chemotherapy.
Salman Saraç et al. (2024)	RCT; n=82 (IG=42, CG=40); Patients who underwent breast cancer surgery; university hospital oncology/surgical outpatient clinics	HADS, Distress Thermometer, EORTC QLQ-C30, Pre- and post-operative assessments	Informative mobile application covering the pre- and postoperative periods (breast cancer biology, treatment, and care content); supported by nurse counseling; intervention group used the application for 1 month	Anxiety and distress levels in the intervention group were significantly lower compared to the control group (p<0.05). Quality of life declined in the postoperative period in both groups; however, no significant difference was found between the groups. Patients using the mobile application reported high satisfaction with the content.
Shi et al. (2024)	RCT; n=96 (IG=48, CG=48); Breast cancer patients receiving chemotherapy	FACT-B (Quality of Life), MSAS (Symptom Burden), Self-Efficacy Scale, Application usage adherence rates were monitored	Nurse-led "mChemotherapy" mobile application: 6-week self-regulation activities + WeChat-based social support + nurse supervision; separate usage guides were provided to the intervention and control groups	Application adherence increased from 4.8% at week 3 to 51.2% at week 6. Symptom burden was significantly reduced in the intervention group (p=0.042); physical wellbeing was higher than in the control group (p=0.024). No significant between-group difference was found in self-efficacy. Nurse-supervised digital programs were shown to support chemotherapy symptom management

Table 1. Studies Investigating Digital Health Literacy and Its Influencing Factors in Cancer Patients

Author-Year	Design & Sample	Measurement Tools	Intervention	Main Findings
Akingbade et al. (2024)	Multicenter, assessor-blind pilot RCT; n=30 (IG=15, CG=15); Breast cancer patients receiving chemotherapy	Physical and psychological symptoms, quality of life; feasibility and acceptability	"CENBA (ChEemo Nurse Breast Cancer Application)" nurse-led psychoeducational application: BC education, coping strategies, discussion forum, nurse consultation; 6 weeks	Completion rate was 93.3%; content and emotional support were rated highly; the application was found to be feasible and acceptable. Participants reported that the intervention was beneficial, and particularly valued the educational content and emotional support provided through the discussion forum and nurse consultations.
Aydin & Gürsoy (2024)	Non-randomized controlled cohort; n=90 (IG=45, CG=45); Breast cancer surgery; 12-month follow-up	FACT-B (Quality of Life) Assessments at baseline, month 1, and month 12	NL-Mapp (nurse-led support mobile application) use in addition to routine care over 12 months	Consistent improvements in quality of life subscale scores persisted at months 1 and 12 (p<0.05).
Tian et al. (2024)	RCT; n=96 (IG=48, CG=48); ovarian cancer patients receiving chemotherapy; T0 (baseline), T1 (post-first cycle), T6 (post-sixth cycle)	Patient-Generated Subjective Global Assessment (PG-SGA) Scale, Nutrition-related blood indices	Nurse-included multidisciplinary team-led WeChat app "Good Nutrition": health education, symptom management, nutritional goals, group chat	A WeChat-based, multidisciplinary, comprehensive nutritional management program significantly improved nutritional status and blood indices in ovarian cancer patients undergoing chemotherapy (p=0.03; p=0.01).
Pang et al. (2025)	RCT (n=123) (IG=62, CG=61); Women who underwent breast cancer surgery	Self-efficacy scale, HADS, FACITFatigue, HR-QoL, Patient satisfaction	iCareBreast (mobile-based, perioperative care program for women undergoing breast cancer surgery); perioperative care guide, breast cancer education, psychological and social support; nurse-led (including live nurse chat feature)	The intervention group reported significantly higher perioperative self-efficacy. No significant between-group difference was found in anxiety and depression. Patient satisfaction was high. It was concluded that nurse-guided digital interventions are more effective.
Özdemir et al. (2025)	RCT; n=100 (IG=50, CG=50); breast cancer patients receiving anthracycline-cyclophosphamide chemotherapy; assessments at baseline (T0) and after each chemotherapy cycle (T1-T4)	MSAS, EORTC QLQ-C30/BR23, MPSSS (Social Support), BAS (Anxiety)	Nurse-led interactive mobile application: out-of-hours nurse/physician access, educational videos, symptom management; 4 chemotherapy cycles	Symptom burden and anxiety decreased significantly; quality of life and social support increased significantly (p<0.05).
Jiang et al. (2025)	Assessor-blind RCT; n=104 (IG=52, CG=52)	Nutritional status, energy-protein intake, weight loss, cognitive beliefs regarding nutritional behavior, gastrointestinal symptoms, quality of life	Nurse-led individualized nutritional intervention (face-to-face education prior to discharge + mobile application + telenursing)	Significant improvement in nutritional status, energy/protein intake, and weight loss in the intervention group; no significant difference in some outcomes (GI symptoms, quality of life).
Yaşar Kartal (2025)	Pre-test-post-test controlled experimental study; n=70 (IG=35, CG=35); colorectal cancer patients undergoing chemotherapy	FACT-C Scale, Nightingale Symptom Assessment Scale (N-SAS), Self-Care Needs Assessment Form, Mobile Health Application Training, Evaluation Form	Kolorektali-M' mobile health application providing education on chemotherapy side effects; supported by individual monitoring based on Orem's Self-Care Theory	Mobile health application improved symptom control and quality of life in colorectal cancer patients. Self-care needs were higher in the intervention group but not statistically significant. Application satisfaction was high (8.32±1.09).

control and QoL, with high user satisfaction (8.32 ± 1.09). Among studies addressing psychosocial outcomes, Vardar (2023) and Agdemir (2024) reported significant reductions in anxiety, depression risk, and symptom severity, alongside improvements in physical, social, and psychological adaptation ($p < 0.05$). Long-term benefits were evidenced by Aydin and Gürsoy (2024), who demonstrated sustained QoL improvements at 12 months post-surgery. Lin et al. (2023), Tian et al. (2024), and Ozdemir et al. (2025) further confirmed significant gains in uncertainty management, nutritional status, symptom burden, and social support across diverse cancer diagnoses.

Conversely, three studies yielded partially positive results. Shi et al. (2024) reported significant reductions in symptom burden ($p = 0.042$) and improved physical well-being ($p = 0.024$), but found no significant between-group difference in self-efficacy. Salman Sarac et al. (2024) observed significant declines in anxiety and distress ($p < 0.05$), yet no significant difference in QoL. Pang et al. (2025) found significantly higher perioperative self-efficacy in the intervention group, with no significant effect on anxiety or depression. Akingbade et al. (2024) confirmed high feasibility and acceptability of the "CENBA" psychoeducational application, with a completion rate of 93.3%.

Findings Regarding Telenursing-Based Interventions

Both studies evaluating telenursing reported positive outcomes. Muñoz-Villaverde et al. (2024) demonstrated that five advanced practice nurse-led teleconsultation sessions significantly increased health literacy, patient empowerment, and QoL in solid tumor patients ($p < 0.05$). Jiang et al. (2025) found that a combined mHealth and telenursing nutritional intervention significantly improved nutritional status and energy-protein intake, though no significant differences were observed in gastrointestinal symptoms or QoL.

Findings Regarding Web-Based Educational Programs

In the single study examining web-based education, Bektas et al. (2022) found that a 24/7 accessible educational platform significantly reduced symptom burden, improved QoL and self-efficacy, and decreased depression scores ($p < 0.05$) in patients receiving systemic chemotherapy, with high patient satisfaction attributed to its graded content structure and continuous accessibility.

Conclusion of Findings

Digital health interventions exert a significant positive influence on symptom management, quality of life, treatment adherence, self-efficacy, and psychosocial adaptation in cancer patients. A salient finding of this review is that nurse-led digital interventions produce more robust and consistent outcomes compared to purely technology-oriented approaches.

DISCUSSION

This systematic review comprehensively examined interventional studies aimed at enhancing digital health literacy among cancer patients, revealing that the vast majority of evidence from the 19 analyzed studies supports the efficacy of digital health interventions. The findings indicate that mobile health (mHealth) applications, telenursing, and web-based educational programs exert significant positive effects on symptom management, quality of life (QoL), treatment adherence, self-efficacy, and psychosocial adaptation.

Efficacy of Mobile Health Applications

The majority of studies within this review focused on mobile application-based interventions, which generally yielded favorable outcomes. This finding suggests that, with the increasing ubiquity of smartphone use, the integration of mHealth applications into cancer care is progressively strengthening. Indeed, existing literature reports that mHealth applications increase patient engagement in chronic disease management and positively influence self-care behaviors (Jiang et al., 2025; Ozdemir et al., 2025). A key factor enhancing the efficacy of these interventions is the multidimensional nature of application content, which provides integrated components such as symptom monitoring, side-effect management, education, and psychosocial support.

An analysis of studies conducted in Turkey reveals that national researchers often utilize nursing theories, such as Orem's Self-Care Deficit Nursing Theory, as a foundation for developing original applications. This theoretical grounding appears to bolster intervention effectiveness (Cıracı Yaşar, 2023; Yasar Kartal, 2025). Such an approach conveys a powerful message: digital interventions should be positioned not merely as technological tools but as integral components of nursing care.

The Decisive Role of Nurse Leadership

One of the most striking findings of this review is that nurse-led digital interventions produce more consistent and robust results. In both Turkish and international studies, patient adherence and satisfaction were notably higher in interventions where nurses assumed an active guiding role. The 93.3% completion rate reported by Akingbade et al. (2024) and the 12-month sustained improvement reported by Aydın and Gürsoy (2024) clearly demonstrate the lasting impact of nurse support on patient engagement. This suggests that digital health applications are insufficient when independent of clinician supervision, and that the coordinator role of the nurse remains indispensable in the digital care process (Akingbade et al., 2024; Aydın & Gürsoy, 2024).

Impact on Symptom Management and Quality of Life

Symptom management and QoL were addressed as primary outcomes in nearly all reviewed studies, with digital interventions generally providing significant improvements. However, it is noteworthy that some studies failed to find a significant difference in QoL. The partial results reported by Salman Sarac et al. (2024) and Pang et al. (2025) indicate that short-term digital interventions may not always suffice to transform a multidimensional and complex outcome such as QoL (Salman Sarac et al., 2024; Pang et al., 2025). In this context, extending intervention durations and personalizing content may contribute to achieving more robust outcomes.

Impact on Psychosocial Outcomes

The review findings show that digital interventions positively affect not only physical symptoms but also psychological dimensions such as anxiety, depression, and psychosocial adaptation. The significant reductions in anxiety and depression scores in studies by Vardar (2023) and Agdemir (2024) emphasize that the capacity of digital platforms to provide psychosocial support should not be overlooked (Vardar, 2023; Agdemir, 2024). Given the psychological burden associated with a cancer diagnosis, the importance of designing digital tools to include psychoeducation and emotional support components becomes even more evident.

Contributions of Telenursing and Web-Based Education

The fact that all studies examining telenursing-based interventions reported positive results suggests that this method offers an effective and feasible alternative, particularly for outpatients or those with limited geographical access to healthcare. The positive impact of teleconsultation led by advanced practice nurses on health literacy and patient empowerment, as shown by Muñoz-Villaverde et al. (2024), paves the way for the systematic adoption of digital communication tools in nursing practice (Muñoz-Villaverde et al., 2024). Furthermore, the web-based educational platform designed by Bektas et al. (2022) not only improved symptom management but also significantly reduced depression levels, suggesting that the psychological implications of digital educational content warrant further investigation (Bektas et al., 2022).

CONCLUSION

The findings of this systematic review strongly support the view that digital health interventions are an effective and feasible approach in cancer care. It is recommended that nurses assume roles not only as practitioners but also as designers, coordinators, and evaluators in this process, and that digital health literacy be integrated as an essential component of oncology nursing practice. Future research would significantly contribute to the field by more comprehensively addressing long-term effects, cost-effectiveness, and strategies to bridge the digital health divide.

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OP - 075

The Effect of Telehealth Intervention on Symptom Management in Cancer Patients: A Systematic Review

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Objective: This systematic review aimed to evaluate the effectiveness of telehealth interventions on symptom management among adult patients with cancer.

Materials-Methods: A comprehensive literature search was conducted between April 1 and May 1, 2023, using EBSCOhost, Cochrane Library, ProQuest, PubMed, ScienceDirect, Google Scholar, Web of Science, and DergiPark databases. Studies were selected according to predefined Population, Intervention, Comparison, Outcome, and Study Design (PICOS) criteria. Peer-reviewed studies published in English or Turkish involving cancer patients aged 18 years and older and available in full text were included. The methodological quality and risk of bias of the included studies were assessed using the RoB 2 and ROBINS-I tools.

Results: A total of 877 studies were screened, and 13 studies met the inclusion criteria, including 10 randomized controlled trials and 3 quasi-experimental studies. The findings demonstrated that telehealth interventions were generally associated with reductions in both physiological and psychological symptoms and improvements in patients' quality of life. Only one study reported no significant improvement in quality of life, while another found no effect of telehealth interventions on diarrhea symptoms. Overall, telehealth applications showed positive outcomes in symptom management among cancer patients.

Conclusion(s): Although no optimal duration or delivery method of telehealth interventions has yet been established, the available evidence suggests that telehealth can effectively support symptom control and improve quality of life in cancer patients. Integrating telehealth applications into routine oncology care may enhance symptom management and patient-centered outcomes. Further high-quality studies are needed to determine the most effective telehealth strategies and implementation approaches.

Keywords: Telehealth; cancer; symptom management; quality of life; oncology nursing; systematic review..



OP - 076

Evaluation of the performance of artificial intelligence chatbots in providing chemotherapy-related information: an infodemiological study

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Objective: The challenging and complex process initiated by a cancer diagnosis is accompanied by significant uncertainty regarding chemotherapy and a heightened need for information. Patients increasingly seek information through both digital platforms and traditional information sources. This descriptive study aimed to evaluate the performance of artificial intelligence chatbots by assessing the quality of information and the accuracy of the content in their responses to questions regarding chemotherapy and the management of chemotherapy-related side effects.

Materials-Methods: Ten questions from the National Cancer Institute's "Support for People with Cancer: Chemotherapy and You" guide were submitted to three widely used and freely accessible artificial intelligence chatbots: ChatGPT-5.2, Gemini 3 Flash, and Microsoft Copilot. The responses generated by the chatbots were evaluated independently by three experts using the "Rubric-Based Assessment Scale for Evaluating AI Chatbot Performance in Educational Settings." Total scores ranged from 9 to 45, and chatbot performance was categorized into five levels. Data were analyzed using the chi-square test with IBM SPSS Statistics version 21.0.

Results: Gemini 3 Flash's responses were consistently rated as "excellent" or "strong" across all questions, while the responses generated by ChatGPT-5.2 were predominantly rated as "excellent" and "strong." In contrast, the performance of Microsoft Copilot was more variable, with scores ranging from 19 to 44 points; it received "limited" and "insufficient" ratings, particularly for responses related to side effects. Regarding the consistency of the evaluations among the experts, the intraclass correlation coefficient (ICC) indicated good agreement for Microsoft Copilot (ICC = 0.79, 95% CI: 0.58–0.92), high agreement for Gemini 3 Flash (ICC = 0.85, 95% CI: 0.69–0.94), and excellent agreement for ChatGPT-5.2 (ICC = 0.91, 95% CI: 0.81–0.97).

Conclusion(s): Within the scope of this study, the quality of information provided in the responses generated by three artificial intelligence chatbots to basic patient questions about chemotherapy was generally high. These findings suggest that artificial intelligence chatbots may serve as supportive tools in patient and caregiver education and information processes when used under the guidance of healthcare professionals.

Keywords: cancer, chemotherapy, education, information, artificial intelligence

OP - 077

Evaluation of the Effectiveness of Programs Aimed at Improving Nurse–Patient Communication in Oncology Patients: A Systematic Review

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Objective: This systematic review was conducted to evaluate the effectiveness of structured communication skills training programs aimed at improving nurse–patient communication in oncology patients.

Method: This study is a systematic review, and the report was prepared in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Before selecting the keywords, relevant studies on the topic were reviewed and appropriate keywords were identified. The eligibility of the selected articles was evaluated jointly by the authors.

The literature search was conducted between March 14, 2026 and March 21, 2026 through the PubMed, The Cochrane Library, and ScienceDirect databases, covering studies published from 2010 to the present. In the search strategy, the keywords “cancer,” “neoplasm*,” “tumor*,” “tumour*,” “malignan*,” “oncology,” “oncology patient*,” and “cancer patient*” were used to define the field of cancer and oncology; “nurse,” “nursing,” and “nurs*” were used for the nursing field; and “communication,” “communication skill*,” “communication training,” and “communication program*” were used to represent communication interventions. To limit the study design, the terms “randomized controlled trial,” “RCT,” and “clinical trial” were added. All terms were combined using Boolean operators (AND, OR), and truncation (*) was used where appropriate to capture different variations.

The methodological quality of the studies was assessed using the JBI Critical Appraisal Checklist for Randomized Controlled Trials. Due to heterogeneity in intervention types and outcome measures, the data were analyzed through narrative synthesis.

Results: According to the PRISMA flow diagram, a total of 1,523 records were initially identified. After duplicate and ineligible records were removed, 1,256 records were screened. Following full-text review, studies were excluded because they did not include a nurse sample or were not randomized controlled trials; consequently, only 5 studies were included in the review. The interventions addressed in these studies included communication skills training and structured communication models. The findings showed that these interventions had positive effects on nurses’ communication skills, self-confidence, patient-centered approach, and satisfaction. Some studies also reported reductions in patients’ psychological distress, anxiety, depression, and pain, as well as improvements in sleep quality, quality of life, and satisfaction with care. In terms of methodological quality, most studies were found to be of moderate quality.

Conclusion(s): Training programs aimed at improving nurse–patient communication in oncology patients have demonstrated positive outcomes. However, there is a need for studies with stronger methodological designs and more detailed evaluation of patient-centered outcomes.

Keywords: Nurse–patient communication, structured communication model, systematic review

Nursing Care Based on Roy Adaptation Model in the Journey of Coping with Thyroid Cancer

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Objective: Thyroid cancer, the most prevalent endocrine system malignancy, imposes a multidisciplinary burden on patients due to the requirements of diagnosis, surgical intervention (thyroidectomy), radioactive iodine (RAI) therapy, and lifelong follow-up. Throughout this process, individuals encounter psychosocial difficulties such as uncertainty, anxiety, isolation, and alterations in body image, in addition to physiological problems. In managing this complex trajectory, nursing approaches that adopt a holistic perspective are of critical importance. This study aims to examine the care process of an individual diagnosed with thyroid cancer through a case study within the framework of the Roy Adaptation Model (RAM).

Case Report: A 24-year-old female patient (A.S.), who presented with complaints of coughing fits, was diagnosed with thyroid cancer following radiological and pathological examinations; subsequently, a total thyroidectomy was performed. The patient, experiencing denial and intense anxiety during the diagnostic phase, sought professional support from an oncology nurse regarding surgical complications and processes related to RAI therapy. The patient was evaluated within the four adaptation modes of RAM (physiological, self-concept, role function, and interdependence). In this context, nursing diagnoses such as acute pain, anxiety, knowledge deficit, risk of hypocalcemia, disturbed sleep pattern, and disturbed body image were identified. Nursing interventions directed toward these diagnoses were planned and implemented to cover both the preoperative and postoperative periods.

Conclusion(s): It was observed that the application of the RAM is an effective tool for enhancing the adaptation capacity of patients during the thyroid cancer process and for providing care in a systematic manner. The holistic perspective provided by the model strengthened the clinical decision-making process and increased the quality of professional nursing care. It is anticipated that this case report will raise awareness regarding the use of theoretical models in oncology nursing practices.

Keywords: Cancer, holistic care, nursing, nursing care, thyroid cancer



OP - 079

An Innovative Approach To Oncology Patient Education: A Systematic Review Of Podcast-Based Education

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Objective: This systematic review aimed to examine the current state of podcast-based patient education in oncology and to evaluate its areas of application, contributions, and limitations.

Materials-Methods: This study was designed as a systematic review and conducted in accordance with the PRISMA 2020 guidelines. A literature search was performed in the PubMed/MEDLINE, Scopus, Web of Science, and CINAHL databases between February 20 and March 20, 2026. The search strategy was developed using keywords related to podcasts, patient education, and oncology. Studies meeting the inclusion and exclusion criteria were independently assessed by two researchers, and data were extracted using a standardized form.

Results: The literature search yielded a total of 499 records from PubMed (n=121), Scopus (n=161), CINAHL (n=142), and Web of Science (n=75). After duplicates were removed (n=67), methodologically ineligible studies (n=93) and studies outside the scope of the review (n=329) were excluded, leaving 10 studies for the final analysis. Of these, five were conducted in the United States, two in the United Kingdom, and one each in Canada, Australia, and France. Seven of the 10 studies focused on podcast development, implementation, or dissemination, whereas three evaluated the quality, content, and narrative characteristics of existing podcasts. Podcasts were used for patient information, experience sharing, psychosocial support, awareness raising, and patient empowerment. A substantial proportion of the content integrated patient experiences with expert knowledge. Quantitative findings showed that podcasts were positively evaluated in terms of usefulness, satisfaction, and relevance to informational needs. However, studies examining content quality identified important limitations related to comprehensibility, actionability, misinformation, and commercial bias. Qualitative findings indicated that podcasts helped patients and survivors feel heard and valued, strengthened their sense of belonging, and enhanced patient-expert interaction.

Conclusion(s): Podcasts appear to be an innovative, accessible, and supportive approach to oncology patient education. However, the available literature remains limited, and current evidence is based on a small number of studies. Therefore, further research with more robust methodological designs and larger sample sizes is needed to better establish the content quality, reliability, and effectiveness of podcasts for oncology patients.

Keywords: Oncology, patient education, podcast



OP - 080

Experiences During the Process After Hematopoietic Stem Cell Transplantation: A Qualitative Study

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Objective: Stem cell transplantation is a critical process fraught with physical and psychosocial challenges for both patients and their families. Analyzing the experiences and expectations during this process is fundamental to improving the quality of nursing care. This research was conducted to identify the experiences of patients and caregivers following stem cell transplantation, their expectations from the healthcare team, and their suggestions regarding the process.

Materials-Methods: In this qualitative study conducted using a phenomenological design, data were collected through individual interviews with 10 patients and 5 caregivers. MaxQDA 24.0 software was used for data analysis, and SPSS 24.0 was used for descriptive statistics.

Results: The average age of the participants was 50.20 ± 13.104 , the average stress score was 5.30 ± 2.451 , the average anxiety score was 5.10 ± 2.378 , the average comfort score was 5.80 ± 1.751 , and the average need for nursing assistance score was 8.90 ± 0.567 . The number of comments made by the participants was 62. The most frequent comment (54.84%) was about "Nursing interventions and care needs." 79.03% of the participants' experiences during this process were positive.

Conclusion(s): Although the transplantation process presents a multifaceted challenge, patients' most fundamental expectations are information sharing, psychological support, and meticulous clinical monitoring from nurses. In nursing care, it is recommended to adopt a holistic approach that combines physical symptom management with emotional support.

Keywords: Stem cell transplantation, transplantation process, care requirements

OP - 081

Quality and Content Analysis of YouTube Videos on Cancer Therapy-Related Cardiotoxicity: A Nursing Perspective

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Objective: Cancer therapy-related cardiotoxicity is a significant complication of anthracycline chemotherapy, radiotherapy, and targeted therapies, adversely affecting morbidity and mortality in both pediatric and adult oncology patients. Patients and caregivers increasingly seek information about cardiotoxicity on online platforms such as YouTube. However, the quality, reliability, and adherence of this content to evidence-based guidelines remain largely unknown. This study aimed to evaluate English-language YouTube videos on cardiotoxicity with regard to quality, reliability, and content accuracy from a nursing perspective.

Material-Methods: A cross-sectional, descriptive content analysis was conducted. English-language YouTube videos identified through predetermined keywords were screened and analyzed. Videos were evaluated using three instruments: (1) the Global Quality Scale (GQS), (2) the Modified DISCERN instrument (binary version, Singh et al., 2012), and (3) a researcher-developed ESC 2022 Cardio-Oncology Guideline-Based Content Accuracy Checklist. Video duration, view count, Video Power Index (VPI), source type, and narrator identity were recorded. Pediatric and adult content were classified separately. Two independent researchers coded all videos; inter-rater reliability was assessed using Cohen's Kappa.

Results: A total of 49 videos were included. Inter-rater reliability was high (GQS: $\kappa=0.85$; DISCERN: $\kappa=0.857$). Overall video quality was moderate (mean GQS=2.93 \pm 0.85; mean DISCERN=2.82 \pm 1.02). Of all videos, 26.5% were of high quality (GQS \geq 4), 36.7% moderate, and 36.7% low quality. Content accuracy analysis based on the ESC 2022 guidelines revealed that the majority of videos inadequately addressed key monitoring and surveillance recommendations (echocardiography, troponin, symptom surveillance). While 61.2% of videos targeted patients and families, only 12.2% addressed pediatric oncology patients or their caregivers. Regarding source type, the majority of videos were uploaded by academic/university institutions (55.1%).

Conclusion(s): Although the overall quality of cardiotoxicity-related YouTube content is moderate, adherence to ESC 2022 cardio-oncology guideline recommendations is insufficient, and content targeting pediatric patients remains notably limited. Both pediatric and adult oncology nurses are recommended to actively guide patients toward evidence-based digital resources and to take a leading role in developing high-quality online educational content in this field.

Keywords: Cardiotoxicity, oncology nursing, YouTube, content analysis

An Examination of Postgraduate Theses on Laughter Yoga in Cancer Patients in Türkiye

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Objective: Cancer stands out as a significant cause of morbidity and mortality in today's healthcare systems, and due to its increasing incidence and high mortality rates, it is among the priority public health problems at the global level. However, cancer is a multidimensional disease that not only affects physical health but also has significant effects on the individual's psychological state and social functioning. In this process, the frequent occurrence of psychological problems such as anxiety and depression in patients and the decrease in quality of life increase the importance of psychosocial interventions in the treatment process. In this context, laughter yoga is considered among the complementary approaches that attract attention in terms of reducing stress and supporting psychological resilience. Considering the physical, emotional, and economic burdens that cancer patients face both due to the disease itself and the treatment processes, laughter yoga stands out as an easily applicable, low-cost, and non-invasive method. In addition, it is thought that this approach has the potential to contribute to the management of disease-related symptoms and to support the alleviation of side effects associated with conventional treatments. The aim of this study is to evaluate the scope, methods, and findings of postgraduate theses on laughter yoga in cancer patients in Türkiye.

Results: A total of four postgraduate theses were identified as a result of the searches. Three of these theses were master's theses and one was a doctoral thesis. The studies examined found that laughter yoga was effective in reducing anxiety and depression levels, improving quality of life and psychological well-being. It was also determined to have positive effects on symptoms such as nausea and vomiting, pain, and sleep quality in hematological cancer patients undergoing chemotherapy.

Conclusion(s): Although there are a limited number of studies in Türkiye, the current findings indicate that laughter yoga is an effective complementary method in the management of psychological and physiological symptoms in cancer patients. Accordingly, the integration of laughter yoga into nursing care is recommended, and further research with larger sample sizes and robust methodological designs is needed.

Keywords: Cancer, laughter yoga, nursing care

OP - 083

Nursing Care for a Paediatric Patient Diagnosed with Acute Myeloid Leukaemia According to Gordon's Functional Health Patterns: A Case Report

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Objective: Acute Myeloid Leukemia (AML), accounting for approximately 15% of childhood leukemias, requires a multidisciplinary approach due to genetic factors affecting prognosis and intensive chemotherapy regimens (Tomizowa & Tsujimoto, 2023). In pediatric AML patients, physiological complications such as treatment-related neutropenia, infection, bleeding, and mucositis, as well as psychosocial problems due to long-term hospitalization, are common (Balık & Buzlu, 2020). In this context, it is critical for oncology nurses to evaluate the patient with a holistic approach. The aim of this case report is to present the nursing care of a 4-year-old pediatric patient diagnosed with AML (M2) based on Gordon's Functional Health Patterns (FHP) model and the NANDA-I classification system (Herdman et al., 2023).

Case Report: A 4-year-old female patient presenting with fever, cough, and epistaxis was found to have severe thrombocytopenia (PLT: 9000/mm³) and Influenza A positivity. Following a bone marrow examination and flow cytometry analysis, she was diagnosed with AML-M2 t(8;21), and the AIE chemotherapy protocol was initiated. Based on Gordon's FHP model, nursing diagnoses including Risk for Infection, Impaired Oral Mucous Membrane, Situational Anxiety/Fear, Disturbed Body Image, Ineffective Role Performance, Impaired Skin Integrity, Risk for Electrolyte Imbalance, and Risk for Bleeding were formulated, and evidence-based nursing interventions were applied.

Conclusion(s): As a result of the model-based nursing care, infection and bleeding complications were safely managed, acute weight loss was stopped with enteral supplements, and the patient's anxiety was reduced through non-pharmacological methods (games, drawing, stories) and family cooperation, ensuring adaptation to the clinical environment. Psychosocial needs belonging to the 4-year-old developmental period, such as "separation anxiety from the twin sibling," "role loss due to inability to go to school," and "disturbed body image," were systematically handled with evidence-based nursing diagnoses (NANDA-I) (Herdman et al., 2023). The FHP model was found to be highly effective in preventing physiological complications and providing holistic psychosocial care in pediatric oncology. It is recommended that holistic models such as Gordon's Functional Health Patterns be integrated into routine clinical use to standardize nursing care in cases like AML, which require complex and long-term hospitalization.

Keywords: Acute myeloid leukemia, Gordon's functional health patterns, NANDA, pediatric oncology

Assessment of Chemotherapy-Induced Infertility, Menopause, and Sexual Health within the scope of Nursing Care in Women of Reproductive Age

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Cancer is an important health problem. Chemotherapy helps patients live longer, but it also causes some side effects. Chemotherapy and radiotherapy affect cancer cells, but they can also damage healthy tissues, especially the ovaries. This can decrease ovarian reserve, cause early menopause, and lead to temporary or permanent infertility. These problems affect women of reproductive age both physically and psychologically (Lambertini et al., 2020). Therefore, nursing care should consider infertility, menopause, and sexual health together. The aim of this review is to examine the physical and psychosocial problems related to chemotherapy-related infertility, menopause, and sexual health. Studies published between 2020 and 2026 were reviewed. Studies show that women should receive early information and guidance about fertility risks before starting cancer treatment. Nurses play an important role in giving information and directing patients to specialists. Improving nurses' knowledge in oncofertility also improves care quality (Barioni et al., 2024). Menopause caused by treatment usually starts suddenly and symptoms can be more severe, which negatively affects quality of life. Hormone therapy is the most effective treatment, but it should be used carefully depending on the type of cancer. If it is not suitable, non-hormonal treatments, local treatments, and lifestyle changes are recommended (Hickey et al., 2024). For vasomotor symptoms like hot flashes, non-drug methods are important. These include avoiding triggers, keeping the environment cool, wearing light clothes, doing regular exercise, and using relaxation or mindfulness techniques. Side effects such as hair loss, fatigue, and weakness may reduce sexual desire. Radiation can also cause vaginal dryness and pain during intercourse, which increases sexual problems. For these issues, moisturizers, local estrogen, and pelvic floor exercises can be helpful. Involving partners in the process can improve coping and relationships. Nurses should create a safe environment, support patients to talk about sexual problems, and plan care individually. Empathy and non-judgmental communication help patients to participate in their care (Bilmez et al., 2024; Şahan & Korucu, 2025). Improving sexual health also includes supporting body image. Relaxation techniques and Kegel exercises can reduce pain. Longer foreplay, using lubricants, and choosing comfortable positions can improve sexual experience. Masturbation may also help increase desire and arousal. Patients should be supported to find what works best for them (Yılmaz & Oskay, 2021). A multidisciplinary approach is important to meet the physical, psychological, and sexual health needs of women with cancer and to improve their quality of life.

Keywords: Chemotherapy, infertility, menopause, nursing care, sexual health



OP - 085

The Turkish Version of the MASCC COG IMPACT: A Validity and Reliability Study of the Unmet Needs Assessment for Cancer Related Cognitive Impairment Impact Scale

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Objective: The assessment and management of its long-term impact are increasingly important in oncology care. The MASCC COG-IMPACT tool was developed to address gaps in diagnosis and intervention. This study aims to adapt the tool into Turkish and evaluate its validity and reliability.

Materials-Methods: This cross-sectional study included adult cancer patients who had completed curative treatment and were followed in oncology and surgical outpatient clinics of a city hospital. The scale was translated and culturally adapted according to international guidelines, with expert review and cognitive interviews for content validity. Construct validity was assessed using confirmatory factor analysis, while reliability was evaluated using Cronbach's alpha and McDonald's omega coefficients.

Results: Among the participants (n=398), most were female (63.3%) and married (80.2%), and had received surgical (71.9%) and chemotherapy (81.4%) treatments for various cancers, mainly gastrointestinal (29.1%), breast (25.9%), and genitourinary (20.9%) types. Confirmatory factor analysis supported the original eight-factor structure with strong model fit in the Turkish sample. Internal consistency indicated excellent reliability of the overall scale and subscales, while convergent and discriminant validity further confirmed its psychometric robustness.

Conclusion(s): The adapted scale was confirmed as a valid and reliable tool for assessing unmet needs related to cognitive impairment in Turkish cancer patients.

Keywords: Assessment, cancer-related cognitive impairment, needs, unmet needs

OP - 086

Physical Activity and Exercise in Pediatric Oncology: Conceptual Distinctions and Clinical Implications

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Objective: Survival in childhood cancers has markedly improved in recent years; however, many children continue to experience treatment-related difficulties, such as persistent fatigue, muscle weakness, reduced endurance, and impaired quality of life. As interest in nonpharmacological rehabilitation grows, movement-based approaches, ranging from general physical activity to structured exercise programs, have become an integral component of pediatric oncology care. This review examines the conceptual differences between these approaches and summarizes current evidence on interventions used during treatment and throughout survivorship in children and adolescents.

Results: Drawing on a narrative synthesis of quantitative and qualitative studies published between 2000 and 2025, the review demonstrates that priorities shift across treatment phases: safety and feasibility are emphasized during active therapy, whereas long-term health and functional recovery become more prominent in survivorship.

Conclusion(s): The findings highlight the need for clearer terminology, coordinated multidisciplinary practice, and meaningful family involvement in planning and sustaining movement-based rehabilitation. They also underscore the importance of consistent outcome measures and longer-term follow-up in future research.

Keywords: Exercise, physical activity, pediatric oncology, rehabilitation, quality of life

Table 1. Clinical Effects of Movement-Based Interventions Across Treatment Phases in Pediatric Oncology

Phase	Type of intervention	Clinical effects
Active treatment	Low-intensity physical activity (exergaming, active play; 2-5 days/week)	Reduced fatigue, improved functional capacity, safe and feasible
Survivorship	Structured exercise (aerobic + resistance; 8-32 weeks, 2-3 days/week)	Increased muscle strength, aerobic capacity, and quality of life
Overall	Multimodal programs (aerobic + resistance + balance)	Improved physical performance and quality of life, high adherence (>80%), low adverse events

Note: This table summarizes the characteristics and main clinical effects of physical activity and exercise-based interventions in pediatric oncology, according to treatment and survivorship phases.

OP - 087

Evaluation of the Effectiveness of Nursing Interventions in Reducing CVC/ Port Catheter-Related Infections in the Oncology Inpatient Unit

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Objective: Central venous catheters and port catheters are frequently used in oncology patients due to chemotherapy administration, parenteral therapies, and the need for long-term vascular access. However, these catheters pose risks for catheter-related bloodstream infection, occlusion, thrombosis, and mechanical complications. Literature reports that standardized catheter care protocols, proper dressing technique, regular catheter flushing, hand hygiene, and education of patients and healthcare professionals significantly reduce catheter-related complications. In particular, pulsatile flushing technique reduces fibrin accumulation within the catheter lumen, chlorhexidine-based dressings decrease infection rates, and nurse-led care bundles improve patient outcomes. The aim of this study was to standardize nursing interventions in patients with catheters, reduce catheter-related infections, occlusion and care errors, demonstrate the effectiveness of nursing care, and improve patient safety.

Case Report: This quality improvement study was conducted among patients with catheters receiving nuclear medicine and oncology treatments. Baseline care practices were first evaluated, after which a standardized nursing care bundle was developed to enhance catheter management. The interventions included pulsatile flushing with appropriate volume and pressure, adherence to standardized flushing protocols before and after catheter use, monitoring of lipid-containing infusions with timely set changes, and replacement of infusion sets at recommended intervals. Catheter dressings were performed using chlorhexidine-based antiseptic solution under aseptic conditions, with transparent dressings changed as indicated. Routine nursing assessments included daily monitoring of the insertion site for signs of redness, discharge, pain, edema, and occlusion, as well as observation of adherence to hand hygiene and aseptic technique. The bundle also incorporated structured education for nurses, patients, and caregivers regarding catheter care, infection prevention, and early recognition of complications, supported by verbal and written materials. All catheter care practices were systematically recorded and monitored.

Results: Complication rates, care compliance, and observational data were compared before and after the intervention. In 2024, CVC-CLABSI and PORT-CLABSI rates were 3.8 and 1.8, respectively. In the first half of 2025, the CVC-CLABSI rate decreased to 2.07, while no infections were observed in the second half of 2025 and the first quarter of 2026, indicating a declining trend. Following implementation of the standardized nursing care bundle, compliance with catheter care practices increased. Additionally, reductions in catheter occlusion and local complications were observed, particularly with pulsatile flushing, routine nursing rounds, and appropriate dressing techniques. Infection risk was further reduced through proper management of lipid-containing solutions and adherence to aseptic technique.

Conclusion(s): This study demonstrates that structured nurse-led care interventions in CVC/port catheter care are effective in reducing complications. Standardization of nursing care improves patient safety and contributes to continuity of treatment.

Keywords: Central venous catheter (CVC), Infection, port catheter

OP - 088

The Effect of Nurses' Emotional Intelligence Levels on Psychological Resilience and Caregiving Behaviors

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Objective: Emotional intelligence is defined as an individual's ability to perceive, manage, and effectively utilize their own emotions and the emotions of others, while psychological resilience refers to an individual's capacity to adapt to stressful and traumatic life events. Nurses with high emotional intelligence and psychological resilience exhibit more empathetic, consistent, and professional behaviors in patient care, thus increasing both patient satisfaction and the quality of care. It is important for nurses, who play a significant role in healthcare, to possess these skills. Aim of this study is to determine the effect of nurses' emotional intelligence levels on their psychological resilience levels and caregiving behaviors. To reveal whether psychological resilience plays a mediating role in the relationship between emotional intelligence and caregiving behaviors.

Materials-Methods: This is a descriptive study conducted between August and October 2025. The sample consisted of 70 volunteer nurses working in the oncology department. Data were collected using the Demographic Information Form, the Schutte Emotional Intelligence Scale, the Short Psychological Resilience Scale, and the Nursing Care Behaviors Scale, and analyzed using SPSS 26 software.

Results: The mean age of the participants was 32.00 ± 7.47 years, and their professional experience was 9.70 ± 7.86 years. The majority were female and held a bachelor's degree. The nurses' emotional intelligence levels were found to be moderate-high, their psychological resilience moderate, and their care behaviors high. In the correlation analysis, a positive and significant relationship was found between emotional intelligence and care behaviors ($r = 0.278$; $p = 0.020$), while no significant sustained relationship was found between emotional intelligence and psychological resilience ($r = -0.182$; $p = 0.131$) and between psychological resilience and care behavior ($r = 0.077$; $p = 0.528$).

Conclusion(s): The positive relationship found between emotional intelligence and caregiving behaviors underscores the importance of empathy and effective communication in patient care, consistent with the literature. In conclusion, emotional intelligence has been shown to be a significant determinant in maintaining nursing care behaviors. Accordingly, it is believed that emotional intelligence-based training programs for nurses will be an effective strategy in improving the quality of care.

Keywords: Emotional intelligence, psychological resilience, caregiving behaviors, oncology nurse

OP - 089

Nursing Practices in the Management of Chemotherapy-Induced Cardiac Toxicity

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Objective: Although advances in cancer treatments have improved survival rates, cancer treatment-related cardiovascular toxicity (CTR-CVT) remains a major cause of mortality that threatens patients' quality of life and life expectancy. The aim of this review is to examine nursing roles in the management of chemotherapy-induced cardiac toxicity and to explore evidence-based current strategies in light of the European Society of Cardiology (ESC) 2022 guidelines.

Scope: This review covers the pathophysiological mechanisms of cardiac toxicity, drug-specific risk scoring tools (HFA-ICOS) recommended in the European Society of Cardiology (ESC) 2022 guidelines and jointly developed by the Heart Failure Society and the International Society of Oncology Society, as well as biomarker monitoring, structured patient education, and nursing self-efficacy assessed via the Cardiotoxicity Management Nurse Self-Efficacy Scale (NSS-CTS).

Conclusion(s): The oncology nurse plays a strategic coordinating role at the center of the multidisciplinary cardio-oncology team, ranging from risk assessment to long-term survival planning. The integration of nursing interventions into evidence-based protocols represents a proactive paradigm that prevents toxicity before it develops.

Keywords: Cardiac toxicity, oncology nursing, chemotherapy

INTRODUCTION AND DEFINITION

Cancer treatment-related cardiovascular toxicity (CTR-CVT) encompasses any adverse cardiovascular effect that develops during or following antineoplastic therapy (Trapani et al., 2020). Once viewed as an "inevitable side effect" of treatment, this condition is now recognized as a critical prognostic factor that can compromise oncological success (Lyon et al., 2022). In particular, the significantly higher risk of cardiac death among childhood survivors compared to the general population has made proactive nursing monitoring essential (Loerzel & Dow, 2003).

PATHOPHYSIOLOGICAL FRAMEWORK AND TOXICITY SPECTRUM

The mechanism of cardiac damage varies depending on the treatment modality used (Trapani et al., 2020):

- **Myocardial Damage (Types 1 and 2):** Anthracyclines cause direct deoxyribonucleic acid (DNA) damage and apoptosis in myocytes (Type 1) via oxidative stress; Human Epidermal Growth Factor Receptor 2 (HER2) inhibitors primarily cause cellular dysfunction (Type 2) (Loerzel & Dow, 2003).
- **Vascular and Electrical Toxicity:** Fluoropyrimidines trigger coronary vasospasm, leading to ischemia; cisplatin, on the other hand, causes endothelial damage and increases the risk of thromboembolism. Ad-

ditionally, agents such as Tyrosine Kinase Inhibitors (TKIs) can lead to QT prolongation and arrhythmias (Lyon et al., 2022).

- **Effects of Radiotherapy:** Ionizing radiation can cause narrowing of vascular structures and valve dysfunction through inflammation and fibrosis (Belzile-Dugas & Eisenberg, 2021).

PREVALENCE AND RISK FACTORS

A significant proportion of patients receiving antineoplastic therapy are at risk of developing cardiac complications. Key risk factors include pre-existing hypertension, diabetes, dyslipidemia, advanced age, and high-dose radiation therapy involving the chest region (Belzile-Dugas & Eisenberg, 2021; Lyon et al., 2022).

EVIDENCE-BASED PRIORITIES IN NURSING MANAGEMENT

Pre-Treatment: Risk Stratification

The European Society of Cardiology (ESC) 2022 guidelines recommend, at Class IIa level— supported by evidence demonstrating the practice’s benefits—that the Heart Failure Association and International Cardiac Oncology Society (HFA-ICOS) risk scoring be performed for every patient. Accordingly, nurses should use agent-specific scoring tools to classify patients into risk groups and document baseline data such as electrocardiogram (ECG), left ventricular ejection fraction (LVEF), and global longitudinal strain (GLS) prior to treatment (Aldebiani et al., 2024).

Clinical Monitoring and Interventions During Treatment

Nursing monitoring ensures that subclinical damage is detected before it becomes permanent. The drug-specific monitoring priorities recommended in the 2022 European Society of Cardiology (ESC) guidelines are summarized in Table 1.

Table 1. Nursing Monitoring Focus by Antineoplastic Drug Group

Drug Class	Risk Stratification (HFA-ICOS / ESC 2022)	Nursing Monitoring Priorities
Anthracyclines (e.g., Doxorubicin)	Class IIa	Monitoring cumulative dose; assessment of B-type natriuretic peptide (BNP) and troponin levels; evaluation of global longitudinal strain (GLS)
HER2 Inhibitors (e.g., Trastuzumab)	Class IIa	Periodic echocardiographic monitoring of left ventricular ejection fraction (LVEF)
VEGF Inhibitors	Class IIa	Close blood pressure monitoring at each visit; management of hypertension
Immune Checkpoint Inhibitors	Based on clinical indication	Close monitoring for signs of myocarditis (chest pain, dyspnea, palpitations)

Warning Sign: If there is a 10% decrease in the Left Ventricular Ejection Fraction (LVEF) or if the value drops below 50%, protective treatments should be initiated at the physician’s discretion (Avila et al., 2018).

Patient Education and Preventive Approaches

The education process transforms the patient from a passive recipient into an active participant (Lee & Reehal, 2024):

- **Lifestyle Management:** Structured education programs covering risk awareness, blood pressure control, smoking cessation, healthy nutrition, and regular exercise should be implemented.
- **Radiation Protection:** The integration of techniques aimed at protecting the heart (e.g., deep inspiration breath-holding training) into the nursing care plan is recommended for patients undergoing radiation therapy.



SURVIVORSHIP AND NURSING SELF-EFFICACY

Since cardiotoxicity can manifest even years after treatment, systematic follow-up is required during the survivorship phase (Aldebiani et al., 2024). Nurses' competence in this area should be assessed using the NSS-CTS (Cardiotoxicity Management Self-Efficacy Scale for Oncology Nurses) to optimize educational needs (Akdeniz Kudubes & Semerci, 2024).

CONCLUSION

(CTR-CVT) The management of cancer treatment-related cardiovascular toxicity is a primary determinant of oncology care. The oncology nurse serves as the strategic coordinator of the multidisciplinary team throughout the process, from risk assessment to survivorship planning. The integration of evidence-based nursing practices into protocols requires prioritizing the patient's cardiac health at least as much as tumor control.

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OP - 090

Nursing Care According to the Neuman Systems Model for Symptoms Developing Due to Bleomycin, Etoposide, Cisplatin Chemotherapy Regimen in a Patient Diagnosed with Sertoli-Leydig Cell Tumor: A Case Report

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Objective: Sertoli-Leydig cell tumors are among the rare ovarian tumors, and in patients—especially in the young age group—fertility preservation and management of treatment-related symptoms gain importance in the care process (Hoffman et al., 2012). Early identification of chemotherapy-related symptoms and planning appropriate nursing care increase the patient's quality of life and support treatment adherence. In this case report, it was aimed to evaluate the symptoms developed in a patient diagnosed with Sertoli-Leydig cell tumor and treated with the BEP (bleomycin, etoposide, cisplatin) chemotherapy regimen within the scope of nursing follow-up according to the Neuman Systems Model.

Case Report: A 21-year-old female patient underwent right salpingo-oophorectomy in January 2026 within the scope of fertility-preserving surgery due to a mass detected in the right ovary, and the postoperative pathology result revealed a diagnosis of Sertoli-Leydig cell tumor. The tumor was determined to be stage IA, and three cycles of Bleomycin, Etoposide, and Cisplatin (BEP) chemotherapy regimen were planned.

The patient was regularly monitored by an oncology nurse throughout the chemotherapy process. During follow-up, chemotherapy-related symptoms such as hyperpigmented skin rashes, impaired body image, neutropenia, fatigue, alopecia, dysuria, constipation, and decreased oral intake due to oral mucositis were observed. Additionally, fever, sore throat, and upper respiratory tract infection findings were monitored in relation to infection development, and antibiotic therapy was administered. The risk of fertility loss and the associated anxiety/stress level were also addressed, and the patient was evaluated with a holistic approach.

Within the scope of nursing care based on the Neuman Systems Model for symptom management, interventions included addressing knowledge deficits, maintaining oral care, supporting skin care, evaluating nutritional status, monitoring signs of infection, and providing education to the patient regarding symptom management.

Conclusion(s): This case demonstrates that early identification of chemotherapy-related symptoms through regular nursing follow-up based on the Neuman Systems Model and the implementation of appropriate nursing interventions contribute to the prevention of complications and ensure the safe and effective continuation of the treatment process. The role of oncology nurses in symptom management, monitoring, and patient education is particularly important in improving treatment adherence and providing holistic care, especially in young patients (Tanrikut & Koç, 2023).

Keywords: Chemotherapy, oncology nursing, ovarian neoplasms, symptom control

INTRODUCTION

In the Neuman Systems Model (NSM), nursing interventions are implemented through three levels of prevention. Primary prevention aims to identify potential stressors before the individual encounters them, reduce the likelihood of exposure to stressors, and strengthen the line of defense (Genç Köse & Demirbağ, 2017; Ahmadi & Sadeghi, 2017). Secondary prevention focuses on supporting the individual after stress has occurred, controlling emerging symptoms, and strengthening the individual's lines of defense (Özer & Gökçe, 2015; Verberk & Fawcett, 2017). Tertiary prevention aims to support reconstitution against the reactions caused by damage and prevent the continuation of instability (Can, 2019; Genç Köse, 2019; Yel et al., 2020).

This case report aimed to present the nursing process of a patient receiving the BEP chemotherapy regimen in accordance with the NSM and to emphasize the importance of using theoretical models in nursing practice. The use of this model in patient care enabled a detailed assessment of patient data and facilitated comprehensive nursing interventions through the three levels of prevention.

The patient was regularly monitored weekly by an oncology nurse through both face-to-face interviews during clinical visits and telephone follow-ups. Written and verbal informed consent was obtained from the patient.

CASE PRESENTATION

A 22-year-old female athlete with no family history of cancer presented to the endocrinology clinic with progressive hirsutism, menstrual irregularities, and clitoromegaly that had increased over the previous three months. She had a history of smoking (1 pack-year) but had quit smoking. The patient had also undergone total thyroidectomy in 2022 due to a 4.5 cm thyroid isthmus nodule that had been monitored since 2020.

Pelvic ultrasonography revealed an 11-cm neoplastic mass lesion. On January 5, 2026, the patient underwent fertility-sparing surgery consisting of right oophorectomy and salpingectomy. Histopathological examination confirmed the diagnosis of a Sertoli-Leydig cell tumor.

On February 24, 2026, evaluation at the oncology department of Ege University Hospital determined the tumor stage to be IA. Three cycles of the BEP chemotherapy regimen (bleomycin 30 mg, etoposide 168.49 mg, cisplatin 33.70 mg) were planned. Additionally, the patient received two doses of Zoladex 3.6 mg injection administered monthly (24.02.2026 and 24.03.2026). Her regular medications included Euthyrox 150 mcg once daily and Genkort twice daily. Premedication was administered before each chemotherapy cycle, including pheniramine maleate (Avil) 45.5 mg ampoule, dexamethasone (Dekort) 20 mg ampoule, palonosetron 250 mcg infusion over 20 minutes, and pantoprazole 40 mg intravenous push.

Table 1. Treatment Plan and Developing Symptoms

Week (Date)	Treatment	Developing Symptoms
Week 1 – 24.02.2026	BEP in the inpatient unit for 5 days	Patient received education about the first chemotherapy cycle. Skin redness developed during treatment. A pre-existing knee rash worsened during hospitalization.
Week 2 – 03.03.2026	Bleomycin push in the outpatient chemotherapy unit	No symptoms were observed.
Week 3 – 10.03.2026	Bleomycin push in the outpatient chemotherapy unit	Neutropenia
Week 4 – 17.03.2026	BEP in the inpatient unit for 5 days	Alopecia and fatigue
Week 5 – 24.03.2026	Bleomycin push in the outpatient chemotherapy unit	Constipation; redness on the back and abdominal region 2 days after treatment completion
Week 6 – 31.03.2026	Bleomycin push in the outpatient chemotherapy unit	Grade 2 oral mucositis and impaired oral intake related to mucositis
Week 7 – 07.04.2026	BEP in the inpatient unit for 5 days	Fatigue
Week 8 – 14.04.2026	Bleomycin push in the outpatient chemotherapy unit	Sore throat, grade 2 oral symptoms, fatigue
Week 9 – 21.04.2026	Bleomycin push in the outpatient chemotherapy unit	Fatigue, oral mucositis

Bleomycin was administered without premedication on March 3 and March 10, 2026. Two days later, the patient developed burning erythematous skin lesions. Subsequently, pheniramine maleate was administered before further bleomycin treatments, and oral antihistamines were prescribed for home use.

During the third week of treatment, laboratory findings indicated neutropenia (WBC: $2.79 \times 10^3/\mu\text{L}$, neutrophils: 9.7%, lymphocytes: 84.2%, hemoglobin: 11.3 g/dL, hematocrit: 33.4%, platelets: $73 \times 10^3/\mu\text{L}$). Bleomycin treatment was continued, and filgrastim (Zarzio) 30 MU subcutaneously four times daily was initiated 24 hours later. Neutropenia education and subcutaneous injection training were provided to the patient's caregiver.

The patient experienced severe localized alopecia. To minimize the psychological impact of progressive hair loss, she was advised to cut her hair before the next treatment cycle.

During the fourth week, laboratory findings prior to the second cycle demonstrated leukocytosis associated with prior G-CSF administration. The patient received the second chemotherapy cycle as an inpatient and reported fatigue and weakness. Constipation developed during this period, and dietary recommendations along with lactulose treatment were provided.

During the fifth week, the patient developed erythematous lesions on the back and abdomen two days after chemotherapy administration and self-administered oral antihistamines at home. A cold shower was recommended. Six days after treatment, she reported sore throat and dysphagia accompanied by decreased oral intake. Oral care education was provided.

During the sixth week, laboratory findings revealed recurrent neutropenia. Oral care management included nystatin oral suspension and benzydamine hydrochloride mouthwash. On April 4, 2026, the patient presented to the emergency department with subfebrile fever, dysuria, headache, sore throat, and impaired oral intake. Viral panel testing was positive for rhinovirus. The patient was hospitalized in the infectious diseases clinic for three days due to upper respiratory tract infection and received antibiotic therapy as well as potassium, calcium, and magnesium replacement therapy.

Due to the patient's excessive symptom burden, the final bleomycin dose was discontinued upon the physician's decision.

EVALUATION ACCORDING TO THE NEUMAN SYSTEMS MODEL

- **Individual (System):** The patient was a young athletic woman with a strong physiological baseline; however, the cancer diagnosis, surgical intervention, and chemotherapy process created multidimensional stressors. Fertility-preserving surgery was particularly significant in terms of body image and reproductive health.
- **Intrapersonal Stressors:** The diagnosis of Sertoli-Leydig cell tumor and chemotherapy-related symptoms including neutropenia, fatigue, alopecia, dysuria, skin reactions, and oral mucositis disrupted the patient's internal balance. Fertility concerns, hair loss, and anxiety related to the diagnosis reflected psychological stressors.
- **Interpersonal Stressors:** Concerns regarding fertility preservation and future family roles constituted significant interpersonal stressors for this young patient.
- **Extrapolsonal Stressors:** Surgical intervention and the hospital-based BEP chemotherapy regimen represented external stressors.
- **Lines of Defense and Resistance:** The patient's normal line of defense was disrupted by the cancer diagnosis and chemotherapy-related adverse effects.
- **Flexible Line of Defense:** Nursing follow-up and patient education aimed to strengthen the flexible line of defense against stressors.
- **Lines of Resistance:** Infection findings such as fever and sore throat, along with neutropenia, indicated activation of the patient's internal resistance mechanisms. Interventions supporting these mechanisms included:
 - G-CSF (Zarzio) administration for neutropenia management
 - Premedication with antihistamines, steroids, and antiemetics
 - Oral care interventions (nystatin and mouthwash)
 - Nursing education and close monitoring

These interventions contributed to the prevention of severe complications and enabled continuation of treatment.

NURSING INTERVENTIONS ACCORDING TO PREVENTION LEVELS

Primary Prevention

- Pre-chemotherapy education
- Neutropenia education

Secondary Prevention

- Early identification and management of symptoms

Tertiary Prevention

- Weekly follow-up visits (telephone and face-to-face)
- Psychological support
- Maintaining treatment continuity through symptom control

NURSING DIAGNOSES AND CARE ACCORDING TO THE NSM

Knowledge deficit related to inadequate understanding of the disease process, chemotherapy treatment, and side effect management.

Goal: To improve the patient's knowledge regarding the disease and treatment process, prevent complications, and enhance treatment adherence.

Interventions:

- Education regarding chemotherapy, medications, and potential side effects
- Hygiene education
- Awareness of early symptoms such as fever, fatigue, oral mucositis, and skin changes
- Education on balanced nutrition, adequate hydration, and rest
- Verbal and written instructions regarding precautions during chemotherapy
- Encouragement of active participation in care

Outcome: The patient demonstrated improved understanding of the treatment process, recognized infection symptoms early, and showed improved treatment adherence.

Impaired oral mucous membrane related to chemotherapy-induced grade 2 oral mucositis, sore throat, and dysphagia.

Goal: To maintain oral mucosal integrity, reduce mucositis symptoms, and sustain adequate nutritional intake.

Interventions:

- Education regarding oral hygiene
- Use of soft toothbrushes
- Avoidance of hot, acidic, and spicy foods
- Daily oral assessment
- Administration of prescribed oral care solutions
- Nutritional support including glutamine and nutritional supplements

Outcome: Despite preventive interventions, the patient developed grade 2 mucositis accompanied by decreased oral intake. The patient also discontinued smoking.

Fatigue related to chemotherapy, disease process, and decreased physical strength.

Goal: To maintain energy levels and support activities of daily living.

Interventions:

- Education on balancing rest and activity
- Nutritional counseling
- Sleep hygiene recommendations
- Regular monitoring of laboratory values and fatigue levels

Outcome: The patient was able to maintain daily activities more effectively, and treatment adherence improved.

Disturbed body image related to chemotherapy-induced alopecia and physical appearance changes.

Goal: To support adaptation to body image changes and maintain psychosocial well-being.

Interventions:

- Education regarding hair loss
- Emotional support
- Discussion of alternatives such as wigs or head coverings
- Referral for psychological counseling when necessary

Outcome: The patient expressed concerns regarding alopecia and subsequently shaved her hair before the second chemotherapy cycle. Family support positively contributed to adaptation.

Constipation related to chemotherapy, decreased physical activity, and altered fluid intake.

Goal: To maintain normal bowel function.

Interventions:

- Education on adequate hydration and fiber intake
- Encouragement of physical activity
- Monitoring bowel habits
- Administration of prescribed laxatives

Outcome: The patient successfully managed constipation at home and increased fluid intake.

Anxiety and stress related to the risk of fertility loss associated with cancer diagnosis, ovarian surgery, and gonadotoxic chemotherapy.

Goal: To reduce anxiety and support fertility preservation.

Interventions:

- Education regarding fertility preservation
- Administration of Zoladex according to physician orders
- Emotional support regarding fertility concerns
- Planning long-term reproductive health follow-up

Outcome: Fertility-preserving surgery and GnRH agonist treatment supported fertility preservation efforts. The patient's anxiety decreased, and treatment adherence improved.

CONCLUSION

According to the Neuman Systems Model, this patient experienced significant intrapersonal stressors; however, appropriate secondary and tertiary nursing interventions contributed to restoring system stability. This case highlights the importance of continuous nursing care and comprehensive symptom management in oncology nursing practice. Oncology nurses play a critical role in strengthening patients' lines of defense against stressors and providing holistic care throughout the treatment process.

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OP - 091

Analysis of Digital Search Trends Related to Lymphedema Using Google Trends Data

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Objective: Lymphedema, which may develop after breast cancer surgery, is an important complication that imposes physical, psychological, and social burdens on patients. The need for information regarding the prevention and management of lymphedema, together with uncertainty and anxiety experienced throughout the process, may increase the tendency of patients and caregivers to seek health information online. This study aimed to examine online search trends related to the term “lymphedema” in Türkiye over the last five years using Google Trends data, and thereby to identify public information-seeking tendencies and levels of awareness.

Materials-Methods: In recent years, digital tools such as Google Trends have become important data sources for evaluating online interest, awareness, and information-seeking behavior related to specific health issues at temporal and geographical levels. This descriptive study was conducted on April 10, 2026, using the Google Trends platform. In the Google Trends Explore interface, the search term “lymphedema” was selected and data for the last five years were analyzed. The data were examined as weekly normalized interest scores (0–100), and temporal changes, regional distribution of interest, and related topics and queries were evaluated.

Results: According to Google Trends data, online interest in the term “lymphedema” in Türkiye showed an increasing trend over the last five years. While the mean interest score was 39.4 in 2021, it increased to 66.3 in 2025; annual mean scores were particularly higher during 2024 and 2025. The regional distribution demonstrated a heterogeneous pattern across Türkiye; the highest relative interest was observed in Eskişehir, Çorum, Edirne, Çanakkale, Burdur, and Kayseri, whereas lower levels were found in some other provinces. In the related topics section, alongside the concept of lymphedema, topics such as treatment, causes, symptoms, physical exercise, and nutrition were prominent, suggesting that searches were conducted to recognize symptoms, understand causes, and access treatment options. In the related queries section, searches such as what does lymphedema mean, lymphedema disease, and what is edema supported the need for basic conceptual information.

Conclusion(s): Google Trends data related to the term “lymphedema” indicate that online interest has increased, that this interest varies regionally, and that searches mainly focus on the definition, symptoms, and treatment of the condition. These findings suggest that there is a public need for information about lymphedema and that community-based awareness initiatives, as well as patient education strategies particularly in the preoperative and postoperative periods, should be strengthened.

Keywords: Online search, google trends, lymphedema

OP - 092

Determining the Factors Affecting Women's Breast Cancer Prevention Behaviors

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Objective: This study aimed to determine the factors affecting breast cancer preventive behaviors among women over the age of 40 who were examined at the gynecology outpatient clinic of Van Regional Training and Research Hospital.

Materials-Methods: The descriptive and cross-sectional study was conducted with 484 women. Ethical approval was obtained, and the data were collected between November 2022 and March 2023 through face-to-face interviews using the Personal Information Form and the Scale for Determining the Factors Affecting Women's Breast Cancer Preventive Behaviors (MEKÖD). The data were analyzed using the independent samples t-test and one-way analysis of variance (ANOVA).

Results: The mean age of the participants was 48.22±6.75, and the mean total MEKÖD score was 104.91±25.92. It was found that 43.8% of the women performed breast self-examination (BSE), and 29.1% had undergone mammography. The MEKÖD scores were significantly higher among women who had received BSE training, performed BSE, had mammography, and knew the frequency of mammography ($p<.05$). Additionally, women with good and moderate income levels had significantly higher MEKÖD total scores compared to those with low income ($p<.05$). However, no significant differences were found in mean scores according to marital status, menstrual regularity, or family history of breast cancer ($p>.05$).

Conclusion(s): The study found that the scale scores for determining factors affecting breast cancer preventive behaviors were at a moderate level. Receiving BSE training, performing BSE, undergoing mammography, and knowing the frequency of mammography positively influenced attitudes toward factors affecting breast cancer preventive behaviors. It is recommended that public health nurses, who play a key role in health promotion and disease prevention, conduct multicenter studies or implement educational programs aimed at improving women's health. Additionally, public health nurses should organize educational programs and provide counseling to increase women's awareness of breast cancer and the factors affecting preventive behaviors.

Keywords: Breast cancer prevention, breast self-examination, mammography screening, women's health

INTRODUCTION

Breast cancer is the most common type of cancer among women and one of the leading causes of cancer-related deaths. In addition, it stands out as a major public health problem that significantly affects women's daily life activities and is gaining increasing importance globally (Haydaroğlu, 2015). According to Global

Cancer Observatory 2020 data, the worldwide incidence of breast cancer is 47.8 per 100,000, while the mortality rate is reported as 13.6 per 100,000. In the same report, the incidence in Türkiye is 37 per 100,000 and the mortality rate is 12 per 100,000 (Globocan, 2020). A study published in Türkiye in 1994 reported a breast cancer incidence of 24 per 100,000, and it has been calculated that this rate has increased approximately 2.5 times to date. The main reasons for this increase include lifestyle changes, population aging, increased awareness, widespread use of mammography screening, and population growth (Yılmaz & Atak, 2014). This situation highlights the importance of prevention, screening, and early diagnosis in breast cancer.

It is not possible to attribute breast cancer etiology to a single factor; multiple factors play a role in its development (Açıköz & Yıldız, 2017). These factors are classified as non-modifiable (age, gender, family history, genetic mutations, etc.), modifiable (nutrition, physical activity, alcohol consumption, breastfeeding, etc.), and controversial (environmental factors, tobacco use, etc.) risk factors (Republic of Türkiye Ministry of Health, 2017; Yavuz & Dolgun, 2015). It is known that controlling modifiable risk factors can reduce the incidence of breast cancer (Açıköz & Akal Yıldız, 2017; Aydoğan et al., 2013). This approach falls within the scope of primary prevention, which aims to prevent the occurrence of disease and promote healthy lifestyle behaviors (Parlar et al., 2005; Çatlı & Önder, 2025). Another important approach in breast cancer prevention is secondary prevention. Its aim is to detect the disease at an early stage through screening methods such as breast self-examination (BSE), clinical breast examination (CBE), and mammography, thereby reducing morbidity and mortality and improving quality of life (Uzun & Özlü, 2019). However, studies show that women do not perform breast cancer screening behaviors at a sufficient level (Mermer & Güzekin, 2021). This situation necessitates understanding the factors affecting individuals' health behaviors. Indeed, it has been reported that women do not receive sufficient knowledge, motivation, and support and therefore do not adequately engage in preventive health behaviors (Karabulutlu et al., 2023).

In this context, one of the most important psychosocial determinants in developing preventive health behaviors is self-efficacy perception. Individuals with high self-efficacy are reported to exhibit recommended health behaviors more frequently (Toygar et al., 2025). Additionally, increasing self-efficacy has been shown to enhance the likelihood of adopting health behaviors (Kıran et al., 2024).

Health professionals, especially nurses, play a significant role in improving women's breast cancer screening behaviors through education, counseling, and risk assessment processes (World Health Organization, 2024). Providing risk assessment and counseling within healthcare services where nurses are involved is effective in promoting early diagnosis and preventive health behaviors (Gevrek & Tümer, 2025). Furthermore, regular screening of women using risk assessment tools and identifying risk factors are crucial for early detection of breast cancer (Ayyıldız & Çam, 2025).

In this context, determining the factors affecting breast cancer preventive behaviors is essential for developing effective interventions. This study aims to identify the factors influencing women's breast cancer prevention behaviors. Research Questions

1. What are the factors (sociodemographic characteristics and screening behaviors) affecting women's breast cancer prevention behaviors?
2. Do women's BSE practice, frequency of mammography, and training status significantly affect their breast cancer prevention behavior levels (MEKÖD scores)?

MATERIALS AND METHODS

This study is a descriptive and cross-sectional research conducted with women aged 40 and over who were examined at the gynecology outpatient clinic of Van Regional Training and Research Hospital, selected through a convenience sampling method.

Population and Sample

The sample size of the study was calculated using the G*Power 3.1 program. The population consisted of 2,500 women aged 40 and over who applied to the gynecology outpatient clinic of Van Regional Training and Research Hospital between November 2022 and March 2023. In the sample size calculation, the effect size was set at a medium level (Cohen's $f = 0.25$), significance level $\alpha = 0.05$, and power $(1-\beta) = 0.80$ (Faul et al., 2007). As a result of the calculation, the minimum required sample size was found to be 252. A total of 484 participants were included in the study, and the sample size was considered sufficient for statistical analyses.

Data Collection Process

Before the study, ethical approval was obtained from the Ethics Committee of Hakkari University (Decision No: 2022/99). Institutional permission was also obtained from Van Regional Training and Research Hospital, and written permission was secured for the use of the scale. In line with ethical principles, participants were informed in detail about the aim and scope of the study, that participation was voluntary, and that the data would be used only for scientific purposes. Informed consent was obtained through face-to-face communication.

Data were collected using the “Scale for Determining the Factors Affecting Women’s Breast Cancer Prevention Behaviors” and a demographic information form. Participants were asked to complete the questionnaire voluntarily, and no identifying information was collected. They were clearly informed that the data would be analyzed only by the researchers and handled in accordance with confidentiality principles. Completing the questionnaire took approximately 10–15 minutes per participant.

Data Collection Tools

In the study, a Personal Information Form prepared by the researchers and the Scale for Determining the Factors Affecting Women’s Breast Cancer Prevention Behaviors were used.

Personal Information Form: The form, which was revised by researchers based on a literature review (Turan and Yiğit 2021), consists of questions including age, gender, education level, and knowledge level about breast cancer.

Measure Factors Influencing Women’s Breast Cancer Prevention Behaviors (ASSISTS): This scale was developed by Khazae-Pool et al. (2016) in Iran and validated for Turkish by Turan and Yiğit (2021). It consists of 33 items and 7 subdimensions: Support Systems (4 items), Self-Efficacy (4 items), Self-Care (6 items), Stress Management (3 items), Motivation (4 items), Attitude (8 items), and Information Seeking (4 items). The Cronbach’s alpha coefficient of the scale is 0.76, and for its subdimensions ranges between 0.70 and 0.77 (Turan & Yiğit, 2021).

Data Analysis

Data were analyzed using SPSS (Version 25.0, SPSS Inc., Chicago, IL, USA). Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to analyze demographic data. Categorical variables were expressed as frequencies and percentages, while continuous variables were presented as mean and standard deviation. For normally distributed data, the independent samples ttest was used to compare two groups, and one-way analysis of variance (ANOVA) was used for comparisons of more than two groups.

Ethical Approval

The study was conducted with the approval of the Scientific Research and Publication Ethics Committee of Hakkari University (Decision No: 2022/99). Institutional permission was obtained from Van Regional Training and Research Hospital. Participants were informed about the purpose, scope, voluntary nature of participation, their right to withdraw at any time without consequences, and confidentiality and anonymity assurances. No identifying data were collected, and all data were stored in a password-protected environment accessible only to the researchers. The study adhered to the principles of the Declaration of Helsinki.

RESULTS

The participants’ average age is 48.22 ± 6.75 . It was found that those with a good and medium income level had a significantly higher average score than those with a poor income level ($F=3.069$; $p=0.047$). Although the mean scale scores of working women and women with higher education levels were higher, these differences were not statistically significant. Additionally, no significant difference was found between the mean scores based on marital status, menstruation regularity, or family history of breast cancer ($p > 0.05$) (Table 1).

When the ASSISTS mean scores were examined according to the participants’ breast cancer preventive behaviors, it was found that those who received BSE (breast self-examination) training had significantly higher mean scores than those who did not, and this difference was statistically significant ($T=2.891$; $p=0.004$). It was also determined that participants who performed BSE, underwent mammography, and knew the frequency of mammography had higher ASSISTS mean scores, and these differences were statistically significant ($T=2.245$; $p=0.025$; $T=2.235$; $p=0.026$; $T=2.284$; $p=0.023$, respectively) (Table 2).

Table 1. Comparison of ASSISTS Mean Scores According to Participants' Descriptive Characteristics

Descriptive Characteristics	Group	n (%)	ASSISTS Scale Score (Mean ± SD)	Test Value
Age	—	—	48.22 ± 6.75	—
Educational Status	Literate	103 (21.3)	99.29 ± 29.07	F = 2.401, p = 0.067
	Primary/Secondary School	226 (46.7)	105.35 ± 25.05	
	High School	83 (17.1)	107.75 ± 25.12	
	University	72 (14.9)	108.30 ± 23.90	
Marital Status	Married	375 (77.5)	104.68 ± 25.84	t = -0.649, p = 0.517
	Single/Widowed	109 (22.5)	106.83 ± 24.94	
Employment Status	Yes	48 (9.9)	111.50 ± 26.40	t = 1.859, p = 0.064
	No	436 (90.1)	104.19 ± 25.79	
Income Status	Good ^a	42 (8.7)	111.35 ± 27.80	F = 3.069, p = 0.047** a,b > c
	Medium ^b	122 (25.2)	107.90 ± 27.87	
	Poor ^c	320 (66.1)	102.93 ± 24.71	
Place of Residence	Province	408 (84.3)	104.25 ± 25.67	F = 0.964, p = 0.382
	District	42 (8.7)	107.09 ± 25.92	
	Village	34 (7.0)	110.11 ± 28.80	
Is Menstruation Regular?	Yes	254 (52.5)	104.72 ± 26.09	F = 1.872, p = 0.155
	No	105 (21.7)	108.71 ± 22.71	
	Menopause	125 (25.8)	102.11 ± 28.00	
Family History of Breast Cancer	Yes	50 (10.3)	106.30 ± 29.98	t = -0.398, p = 0.690
	No	434 (89.7)	104.75 ± 25.45	

* Independent samples t-test ; ** One-way analysis of variance (ANOVA)

Women's mean ASSISTS score was found to be 104.91±25.92, with the lowest score obtained from the scale being 50 and the highest score being 151 (Table 3). The mean scores for the subdimensions were as follows: Support 11.70±2.90; Self-efficacy 12.16±3.34; Self-care 20.90±5.69; Stress management 10.60±2.76; Motivation 13.08±3.60; Information seeking 12.83±3.74; and Attitude 23.59±6.09.

Table 2. Comparison of ASSISTS Mean Scores According to Participants' Breast Cancer Preventive Behavior Characteristics

Breast Cancer Preventive Behavior Characteristics	Group	n (%)	ASSISTS Scale Score (Mean ± SD)	Test Value
Receiving BSE Training	Yes	77 (15.9)	112.68 ± 20.79	t = 2.891 p = 0.004*
	No	407 (84.1)	103.44 ± 26.55	
Performing BSE	Performs	212 (43.8)	109.85 ± 24.50	t = 2.245 p = 0.025*
	Does not perform	272 (56.2)	101.06 ± 26.38	
Having Mammography	Has	141 (29.1)	109.00 ± 25.45	t = 2.235 p = 0.026*
	Does not have	343 (70.9)	103.23 ± 25.96	
Knowing Mammography Frequency	Knows	91 (18.8)	110.48 ± 24.15	t = 2.284 p = 0.023*
	Does not know	393 (81.2)	103.62 ± 26.17	

ASSISTS: Measure Factors Influencing Women's Breast Cancer Prevention Behaviors ; * Independent samples t-test; BSE: Breast Self-Examination; % percentage, p < 0.05

Table 1. Comparison of ASSISTS Mean Scores According to Participants' Descriptive Characteristics

ASSISTS Sub-Dimensions	Min-Max	Mean±SD
Support	6.00-20.00	11.70±2.90
Self-Efficacy	6.00-19.00	12.16±3.34
Self-Care	9.00-28.00	20.90±5.69
Stress	5.00-15.00	10.60±2.76
Motivation	6.00-19.00	13.08±3.60
Information Seeking	6.00-20.00	12.83±3.74
Attitude	12.00-38.00	23.59±6.09
ASSISTS Total Score	50.00-151.00	104.91±25.92

ASSISTS: Measure Factors Influencing Women's Breast Cancer Prevention Behaviors; Min: Minimum; Max: Maximum; Avg: Average; SS: Standard Deviation

DISCUSSION

The findings of this study will be discussed in the light of the literature regarding the relationship between breast cancer preventive behaviors and socioeconomic characteristics as well as health-related behaviors among women aged 40 and over. In this study, the mean score of the ASSISTS was found to be at a moderate level (104.91±25.92). Consistent with the present findings, Okan et al. (2023), in a study conducted with 225 female textile workers, also reported a moderate ASSISTS score (103.09±16.08). Similarly, Gül and Büyükbayram (2022), in a cross-sectional descriptive study conducted in the Southeastern Anatolia Region with 406 women aged 20 years and older, reported a mean ASSISTS score of 107.20±17.86. In addition, another descriptive study conducted in Türkiye with 587 women aged 18 and over found a mean ASSISTS score of 104.15±10.03 (Güneş et al., 2022). In line with similar studies, the generally moderate level of scale scores suggests that women's positive perceptions regarding factors affecting breast cancer prevention behaviors are not at a sufficient level.

In the present study, women with good and moderate income levels had significantly higher ASSISTS scores than those with low income ($F=3.069$; $p=0.047$). Qualitative studies addressing social determinants of breast health behaviors report that factors such as financial burden, healthcare access costs, and lack of knowledge negatively affect women's participation in breast cancer screening and limit access to screening services (Kasper et al., 2024; Vinegar et al., 2024; Conley et al., 2025). These findings suggest that low socioeconomic status negatively affects breast cancer prevention behaviors and that supportive interventions for this group are needed.

Women who received BSE (breast self-examination) training had significantly higher ASSISTS scores than those who did not. The literature indicates that women who receive breast cancer education have significantly increased knowledge levels, awareness, and screening behaviors (Molokwu et al., 2024; Agide et al., 2024). These findings demonstrate that BSE training is effective in improving women's breast cancer prevention behaviors and highlight the importance of expanding education-based interventions.

In this study, women who performed BSE had higher ASSISTS scores than those who did not. Similarly, studies by Okan et al. (2023), Gül and Büyükbayram (2022), and Güneş et al. (2022) reported that ASSISTS scores were higher among women who regularly performed BSE compared to those who performed it occasionally or never. A literature review also reported that BSE practice and mammography screening behaviors significantly affect ASSISTS scores, with women who regularly perform BSE having higher prevention behavior scores (Öcalan & Demir, 2024). These findings may be explained by the fact that health behaviors such as BSE contribute to women's sense of control and responsibility over their own health and increase awareness of breast health (Çidem et al., 2019).

In this study, 43.8% of women performed BSE. Similarly, Mermer and Güzekin (2021) reported that 32.0% of participants performed BSE monthly, while Birhane et al. (2017) reported a rate of 28.3%. In another study by Öcalan and Demir (2024), 55.8% of women performed BSE, while Nacar (2018) reported a rate of 39.7% among women with a mean age of 40.12 years. Additionally, Çidem and Ersin (2019) found that 35.8% of participants performed BSE. The differences between studies may be attributed to factors such as demo-

graphic and obstetric characteristics, personal or family history of cancer, access to screening programs, and attitudes toward breast cancer.

In the present study, participants who underwent mammography and knew the frequency of mammography had significantly higher ASSISTS scores. Studies in the literature report that women who undergo mammography have significantly higher breast cancer knowledge levels compared to those who do not (Ashareef et al., 2020). Güneş et al. (2022) also found that women who knew the frequency of mammography had higher ASSISTS scores. These findings indicate that mammography awareness and screening behaviors positively influence women's breast cancer prevention behaviors.

Limitations of the Study

This study has several limitations. First, it was conducted in a single center (Van Regional Training and Research Hospital), which limits the generalizability of the findings. Due to its cross-sectional and descriptive design, causal relationships between variables cannot be definitively established.

Data were collected through face-to-face interviews and self-reports, which may have led to social desirability bias and recall bias among participants. In addition, the use of convenience sampling increases the risk of sampling bias.

Furthermore, only certain sociodemographic and behavioral variables were examined, while other potential influencing factors such as cultural beliefs, access to healthcare services, and psychosocial factors were not included. Finally, since the study was limited to women aged 40 years and older, the findings cannot be generalized to younger age groups.

CONCLUSION AND RECOMMENDATIONS

This study demonstrated that factors influencing breast cancer prevention behaviors among women aged 40 years and older are multidimensional. The moderate level of ASSISTS scores indicates that awareness and attitudes regarding breast cancer prevention behaviors are not at the desired level. Sociodemographic variables such as education level, employment status, and income level, as well as health behaviors such as performing BSE, undergoing mammography, and having knowledge about these practices, were found to be determining factors. In contrast, variables such as marital status, menstrual regularity, and family history did not show a significant effect, suggesting that these behaviors are more closely related to learned and supported health habits.

Based on these findings, targeted interventions should be planned especially for women with low socioeconomic status. Structured educational programs aimed at increasing knowledge levels and strengthening self-efficacy should be expanded. Educational activities on BSE, mammography awareness, and screening frequency should be systematically implemented within primary healthcare services.

It is important for health professionals, especially public health nurses, to increase counseling services for women, conduct individualized risk assessments, and establish regular follow-up programs. In addition, the development of community-based, multicenter, and culturally adapted intervention programs will contribute to reducing health inequalities, particularly among disadvantaged groups.

Future studies are recommended to include longitudinal and experimental designs that allow examination of causal relationships between factors affecting breast cancer prevention behaviors. Furthermore, studies conducted in different regions with larger samples will improve the generalizability of the findings.

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OP - 093

Evaluation of Responses from AI Chatbots Regarding Cancer Pain: An Infodemiological Study

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Objective: Pain is one of the most common and difficult symptoms to manage in cancer. This study aimed to compare the quality of responses provided by widely used artificial intelligence (AI) chatbots in Türkiye to questions about cancer pain, based on criteria such as appropriateness, accuracy, effectiveness, consistency, comprehensiveness, language, and style.

Materials-Methods: This descriptive infodemic study used freely available AI chatbots from OpenAI, MetaAI, and Google AI (ChatGPT 4.0, Meta Llama 4.0, and Gemini 3.0). These chatbots were selected because ChatGPT is widely used in Türkiye, Google AI is integrated into the most commonly used search engine, and MetaAI is integrated into WhatsApp. Turkish questions on cancer pain, frequently asked by patients and their relatives, were posed in two sessions. Chatbots were instructed to respond in Turkish using provided references. Different email accounts were used for Google AI and OpenAI, and different mobile numbers for MetaAI in each session. Responses were evaluated by five experts in cancer care using the "Rubric-based Assessment Scale for Evaluating the Performance of AI Chatbots in Educational Settings (EOYZSRPD)." Responses were scored and recorded in SPSS. Comparisons were made across rubric criteria, and inter-expert agreement was assessed using the intraclass correlation coefficient.

Results: Preliminary findings are based on ongoing analysis. Each chatbot produced 20 responses to 10 questions across two sessions (a total of 60 responses). In the first session, responses ranged from 85 to 303 words, with 169 cited sources (100 accessible, 69 inaccessible). In the second session, responses ranged from 191 to 553 words, with 130 cited sources (96 accessible, 34 inaccessible). According to rubric scores from the first session, Google AI scored 36.86/45, OpenAI 37.50/45, and MetaAI 26.84/45.

Conclusion(s): Preliminary results indicate that Google AI and OpenAI demonstrate strong performance; however, caution is needed regarding arguments and evidence. Final results will be presented after completion of the analysis.

Keywords: Artificial intelligence, cancer, chatbots, pain, patient education

Hepatotoxicity in Cancer Treatment: A Systematic Review on Nursing Care and Management

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Hepatotoxicity during cancer treatment is a form of organ toxicity resulting from damage to liver cell structure and function caused by anticancer agents. For cancer patients, multiple factors contribute to hepatotoxicity, particularly treatment modalities such as chemotherapy, immunotherapy, and radiotherapy. Hepatotoxicity may lead to modification or discontinuation of cancer treatment, prolonged hospital stay, and increased morbidity and mortality. This review was conducted to enhance nurses' knowledge and care competencies regarding hepatotoxicity. The development of hepatotoxicity is influenced not only by the type, dose, and route of administration of anticancer agents, but also by patient-related factors such as genetic predisposition, pre-existing liver disease, comorbidities, age, sex, polypharmacy, and the use of herbal products. The incidence of chemotherapy-induced hepatotoxicity ranges between 15–30%, while immunotherapy-related hepatotoxicity occurs at rates between 1–15%. Clinically, hepatotoxicity may present with symptoms including elevated liver enzymes, jaundice, fatigue, nausea, right upper quadrant pain, and liver failure. Accurate diagnosis requires regular monitoring of liver function tests, patient history, and physical examination. Although there is no specific treatment protocol for hepatotoxicity, management primarily involves dose reduction or discontinuation of the causative agent. Corticosteroids, immunosuppressive therapies, and hepatoprotective agents may be used. In this process, nurses play critical roles in monitoring clinical signs, evaluating laboratory values, early detection of complications, symptom management, and patient education. Nursing management encompasses a holistic approach aimed at preventing the development and progression of hepatotoxicity. At the initiation of cancer treatment, nurses assess baseline liver function and identify risk factors. Throughout treatment, they regularly monitor ALT, AST, bilirubin, albumin, and coagulation parameters. They assess mental status for signs of hepatic encephalopathy, observe skin findings such as jaundice, pruritus, petechiae, and purpura, and monitor fluid and electrolyte balance. Nurses provide individualized care for symptoms such as fatigue, nausea, vomiting, pain, and pruritus. They support nutritional management by promoting a high-protein, low-fat diet and collaborating with dietitians to encourage antioxidant-rich foods. Additionally, they educate patients on avoiding hepatotoxic drugs and alcohol. Nurses provide education on recognizing symptoms of hepatotoxicity, seeking timely medical care, and proper medication use. Strengthening patients' self-care abilities and encouraging participation in the treatment process are key goals of nursing management. In conclusion, hepatotoxicity associated with cancer treatment is a critical adverse effect requiring a multidisciplinary approach. Oncology nurses play a vital role in improving care quality, contributing to clinical decision-making, and enhancing patient outcomes through increased awareness, early detection, and effective management.

Keywords: Cancer, hepatotoxicity, liver toxicity, organ toxicity

INTRODUCTION

Hepatotoxicity during cancer treatment arises as a result of damage caused by anticancer drugs to the structure and function of hepatocytes (Joel et al., 2026). Hepatotoxicity may occur either as a result of cancer treatments or due to the development of conditions such as the use of multiple drugs or infections during this process, owing to the liver's physiological roles (Kaya, 2019, Chapter 55, pp. 625–626). Hepatotoxicity, which is



commonly observed in treatment methods such as chemotherapy, immunotherapy, and radiotherapy, leads to the modification or discontinuation of treatment protocols, prolonged hospital stays, and increased morbidity and mortality (Joel et al., 2026). This traditional review was conducted to enhance nurses' knowledge levels regarding hepatotoxicity—a form of toxicity that may arise during the cancer treatment process—and improve their care competencies.

RISK FACTORS FOR HEPATOTOXICITY

Cancer patients are administered anticancer drugs that have potentially hepatotoxic effects (Li et al., 2025). Hepatotoxicity may occur in various treatment modalities, particularly chemotherapy regimens, targeted therapies, immunotherapies involving immune checkpoint inhibitors, and abdominal radiotherapy; this risk is further increased in combination therapies (Joel et al., 2026). Incidence rates of hepatotoxicity are reported to range from 15% to 30% for chemotherapy and from 1% to 15% for immunotherapy (Joel et al., 2026; Yu et al., 2026). For example, in a study involving 216 adult cancer patients, chemotherapy-related hepatotoxicity developed in 29.2% of patients (Joel et al., 2026).

Among chemotherapeutic agents, various drug classes—including antimetabolites, alkylating agents, vinca alkaloids, antitumour antibiotics, topoisomerase inhibitors, platinum derivatives, taxanes, and tyrosine kinase inhibitors—can cause hepatotoxicity (Joel et al., 2026). Similarly, immune checkpoint inhibitors can also cause hepatocellular, cholestatic, and mixed-type liver damage due to excessive immune activation (Rabin et al., 2026). The risk of hepatotoxicity varies depending on the type, dose, and route of administration of the agents used in treatment, as well as the patient's individual factors (Yu et al., 2026). These include genetic predisposition, immunosuppression, pre-existing liver diseases and the current state of liver function, age (being of advanced age for chemotherapy; being of young age for radiotherapy and immunotherapy), gender, comorbidities (HIV, DM, etc.), high lactate dehydrogenase (LDH) levels, other medications used alongside cancer treatment or polypharmacy, alcoholism, a history of transplantation, blood transfusions, diet, and exposure to toxins (Pang et al., 2026; Joel et al., 2026; Kaya, 2019, Chapter 55, pp. 625–626). In radiotherapy, doses exceeding 30–40 Gy increase the risk of hepatotoxicity (Kaya, 2019, Chapter 55, pp. 625–626).

SIGNS AND SYMPTOMS OF HEPATOTOXICITY

The development of hepatotoxicity in cancer patients manifests itself through various clinical signs and symptoms. These symptoms vary depending on the extent to which hepatocyte function is affected, the type of treatment used, and the patient's general state of health (Kaya, 2019, Chapter 55, pp. 625–626). Early diagnosis and intervention are essential to prevent the progression of hepatotoxicity.

Drugs used in cancer treatment cause damage to liver structure and functional impairment. Hepatotoxicity arises from various aetiologies, including metabolic disturbances via cytochrome P450 enzyme inhibition, direct hepatocyte damage, or immune-mediated damage; it can lead to elevated liver enzymes or bilirubin levels. This condition is generally transient, and levels return to normal after the drug is discontinued (Joel et al., 2026). For example, chemotherapy agents can cause various forms of liver damage, including elevated liver enzymes, drug-induced hepatitis, portal vein occlusion, steatohepatitis, fibrosis, and liver failure. Platinum derivatives can cause elevations in liver enzymes; they may lead to sinusoidal obstruction syndrome associated with sinusoidal and vascular liver damage (Vincenzi et al., 2025; Li et al., 2025). Methotrexate may contribute to the development of fibrosis and cirrhosis; 5-fluorouracil may cause hepatic steatosis and even acute liver failure through direct toxicity and the accumulation of metabolic by-products (Li et al., 2025). Autoimmune hepatitis or immunemediated cholangitis associated with immune checkpoint inhibitors may also occur (Vincenzi et al., 2025). Depending on the extent of liver involvement, these may present with varying degrees of claycoloured stools, changes in urine colour, itching, nausea and vomiting, dyspepsia, fatigue, jaundice, pain in the right upper quadrant, petechiae and purpura on the skin, ascites, arrhythmia, and mental changes (Kaya, 2019, Chapter 55, pp. 625–626).

Radiation-induced liver disease, or radiation hepatitis, is characterised by jaundice without ascites following liver irradiation. In conventional fractionated radiotherapy, it occurs at doses above 30 to 35 Gy in adults, whilst in children or adults who have recently undergone partial hepatectomy, it may develop even at lower doses (Kaya, 2019, Chapter 55, pp. 625–626; DeLeve, 2003).

Furthermore, due to the decline in liver function associated with the development of hepatotoxicity, problems may arise in the activation of drugs within the liver, and the therapeutic effects of these drugs may

be reduced. Furthermore, if there is a reduction in the liver's detoxification capacity, toxic effects may occur due to an increase in the drug's free fraction (Kaya, 2019, Chapter 55, pp. 625–626).

DIAGNOSIS OF HEPATOTOXICITY

Detecting hepatotoxicity in cancer patients requires close monitoring of liver function and the use of various diagnostic methods. As liver function is at risk, patients undergoing treatment are routinely and carefully monitored for liver function tests and potential symptoms. Liver function tests are checked before treatment, once a week for the first month, and then once a month thereafter (Kaya, 2019, Chapter 55, pp. 625–626). The patient's medical history, medications used during treatment, history of radiotherapy, and comorbidities are reviewed in detail. In the clinical assessment, the patient's condition is first carefully evaluated, and hepatotoxicity is identified. Although patient complaints vary widely during the clinical examination, most patients may be asymptomatic; in symptomatic patients, however, non-specific signs and symptoms such as fever, fatigue, general malaise, right upper quadrant abdominal pain, and loss of appetite are observed. In more severe cases, patients may present with jaundice, pruritus, abdominal distension due to ascites, and signs and symptoms indicative of acute liver failure. This physical examination can guide the diagnostic process (Savino et al., 2024). At this stage, laboratory tests (serum bilirubin, AST, ALT, INR, GGT, and ALP levels, Hepatitis B virus (HBV), Hepatitis C virus (HCV), and Human Immunodeficiency Virus (HIV)), as well as radiological examinations, ultrasound, MRI and biopsy, may also be utilised as part of a comprehensive assessment (Savino et al., 2024). A classification system developed for drug-induced liver injury may also be utilised (Savino et al., 2024; Fontana et al., 2009). In the diagnosis of hepatotoxicity, the National Cancer Institute has also classified elevations in serum enzyme levels, including ALT, AST, ALP, and GGT, within the 'Common Terminology Criteria for Adverse Events' (CTCAE v6.0, 2025).

Table 1. Common Terminology Criteria for Liver Toxicity

Liver function test	Grade 1	Grade 2	Grade 3	Grade 4
Alkaline phosphatase	> ULN – 2.5 × ULN	> 2.5–5.0 × ULN	> 5.0–20.0 × ULN	> 20.0 × ULN
Bilirubin	> ULN – 1.5 × ULN	> 1.5–3.0 × ULN	> 3.0–10.0 × ULN	> 10.0 × ULN
Aspartate aminotransferase	> ULN – 3.0 × ULN	> 3.0–5.0 × ULN	> 5.0–20.0 × ULN	> 20.0 × ULN
Alanine aminotransferase	> ULN – 3.0 × ULN	> 3.0–5.0 × ULN	> 5.0–20.0 × ULN	> 20.0 × ULN

ULN: Upper Limit of Normal, Common Terminology Criteria or Adverse Events (CTCAE) v6.0, 2025. <https://dctd.cancer.gov/research/ctep-trials/for-sites/adverse-events/ctcae-v6.pdf>

TREATMENT OF HEPATOTOXICITY

There is no specific treatment for hepatotoxicity caused by anticancer drugs. Hepatoprotective drugs used in the treatment of hepatotoxicity aim to improve liver function, promote liver cell regeneration, and/or enhance liver detoxification (Niu et al., 2021). To treat hepatotoxicity associated with immune checkpoint inhibitors, various immunosuppressants such as corticosteroids and mycophenolate mofetil are used as monotherapy or in combination therapy (Vincenzi et al., 2025). Detoxification agents (N-acetylcysteine, glutathione, etc.), anti-inflammatory drugs (glycyrrhizic acid, etc.), hepatocyte membrane protectants (polyene phosphatidylcholine, etc.), and antioxidants (bicyclol, silymarin, etc.) may also be included among the treatment options (Vincenzi et al., 2025). Although various hepatoprotective drugs, including ademetonine, ursodeoxycholic acid, bisacodyl, and silymarin, have shown consistent improvements in elevated liver enzymes following treatment, the number of studies in this field is limited, and the number of patients included is generally small (Bayram & Uçar, 2024; Vincenzi et al., 2025; Li et al., 2025). Evidence-based treatment protocols for hepatoprotective therapies should be developed. In cases of hepatotoxicity caused by anticancer drugs, the patient's medication history—particularly the timing of drug initiation and discontinuation—must be thoroughly assessed. A previously administered drug may remain active and continue to cause hepatotoxic effects. Furthermore, it is crucial to rule out progression of the underlying tumour as the cause of elevated aminotransferase levels. In

cases of hepatotoxicity caused by anticancer drugs, liver function tests must be closely monitored following dose reduction or discontinuation of the suspected drug. In moderate cases, assessments should be carried out every 48–72 hours; in severe cases characterised by a decrease in prothrombin time or an increase in bilirubin levels, daily monitoring is recommended (Riveiro-Barciela & De Martin, 2025). It should also be emphasised that hepatitis B screening is recommended before initiating cancer treatments; antiviral prophylaxis is required for HBsAg-positive patients (Riveiro-Barciela & De Martin, 2025). Patients who have recovered from HBV infection should not receive antiviral prophylaxis; however, liver transaminases, HBsAg, and HBV DNA levels must be monitored every three months (Savino et al., 2024).

In advanced cases, where symptoms such as jaundice and prolonged prothrombin time are present, treatments such as albumin and fresh frozen plasma may be planned for patients with developing acute liver failure to address issues with protein synthesis and coagulation. Steroids are frequently used in the treatment of acute liver failure. In progressive conditions such as hepatic encephalopathy, more advanced treatments such as plasma exchange and haemodiafiltration may be considered (Bayram & Uçar, 2024).

NURSING CARE

The management of hepatotoxicity is primarily achieved by reducing drug doses in cases of hepatotoxicity or, if liver damage remains resistant to dose reduction, by discontinuing the toxic agent (Mudd & Guddati, 2021). During this process, the nurse manages care by monitoring symptoms that have developed or may develop in the patient. In this context, nursing management involves a holistic care approach aimed at preventing the development of hepatotoxicity and halting its progression. The nurse regularly monitors ALT, AST, bilirubin, albumin, and coagulation tests, and assesses risk factors. They monitor the skin for jaundice, petechiae, and purpura, and protect the patient from the risk of injury. Coagulation disorders, such as prolonged thrombin and prothrombin times, are monitored. The patient's mental status is monitored for hepatic encephalopathy. In the presence of pruritus, a warm shower and moisturising the skin are recommended. Local treatment with antihistamines or steroids is administered as directed by the doctor. Monitoring the patient's daily weight, oedema, skin colour, and fluid intake and output are among the nurse's responsibilities. The nurse is also responsible for assessing the patient's fatigue and planning their daily activities. In the presence of pain, the nurse plans pain management by assessing the location, timing, and intensity of the pain. In cases of acid regurgitation and dyspnoea, the nurse positions the patient in the semi-Fowler's position, monitors vital signs, and assesses respiration. The nurse also administers treatments during this process in accordance with the doctor's instructions (Kaya, 2019, Chapter 55, pp. 625–626). The discontinuation of medications that may be toxic to the liver and the cessation of alcohol consumption are ensured (Savino et al., 2024). Furthermore, nutrition is monitored from a hepatoprotective perspective; a high-protein, low-fat diet, combined with essential amino acid supplementation, may enhance liver repair. The literature indicates that antioxidant supplementation, including vitamins E and C and selenium, has shown beneficial effects in reducing hepatic oxidative stress and inflammatory responses (Li et al., 2025). Nurses develop patient education and support plans to improve quality of life and self-care, addressing the nature of the disease, medications, nutrition, and symptoms of toxicity, whilst managing emerging side effects such as cancer treatment and hepatotoxicity.

CONCLUSION

Hepatotoxicity, which may occur during cancer treatment, is a condition that nurses must manage. Oncology nurses should be aware of potential liver complications and guide patients' treatment by monitoring them appropriately. To raise awareness of hepatotoxicity, facilitate early intervention and optimise patient care, nurses in care-giving roles should undertake initiatives to enhance the knowledge levels of patients, their families and colleagues. Oncology nurses should research new care methods to reduce cancer treatment-related hepatotoxicity and contribute to the development of evidence-based practices and their integration with technology.

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OP - 095

Keeping hope for dying children and their families: The experiences of physicians and nurses in pediatric oncology

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Objective: This study aims to explore physicians' and nurses' experiences of sustaining hope for dying children and their families in pediatric oncology settings.

Materials-Methods: This qualitative study used a phenomenological design. Data were collected through 45–60-minute face-to-face semi-structured interviews. A purposive sample of 23 healthcare professionals (12 physicians and 11 nurses) working in pediatric hematology-oncology units in Türkiye, each with at least two years of experience, was recruited. Interviews were audio-recorded with consent, transcribed verbatim, and conducted until data saturation was reached. Data were analyzed using reflexive thematic analysis to identify key themes and subthemes.

Results: Three main themes emerged: (i) the importance of hope as a coping mechanism and support for treatment adherence; (ii) challenges in maintaining hope, including balancing hope and realism, emotional burden and burnout, the impact of relapse, and professional responsibility; and (iii) strategies for sustaining hope, such as individualized communication, sharing positive examples, and emotional suppression. Subthemes indicated that hope functions as a psychological anchor in uncertainty, while relapse significantly undermines it. Healthcare professionals often suppress emotions to maintain professional roles. The findings highlight the cultural and emotional complexity of sustaining hope and the delicate balance between fostering hope and acknowledging clinical realities.

Conclusion(s): Maintaining hope is a key aspect of pediatric oncology care, positively affecting children's and families' well-being and treatment adherence. However, it also places a significant emotional burden on healthcare professionals and involves ethical challenges. The findings highlight the need for culturally sensitive communication, interventions to strengthen emotional resilience, and improved ethical decision-making processes. Enhanced training and institutional support may improve care quality and inform supportive health policies in pediatric oncology settings.

Keywords: Health professionals, hope, pediatric oncology, qualitative research



OP - 096

An examination of the workforce profiles and working conditions of oncology nurses in Türkiye

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Objective: Oncology nursing is a physically, emotionally, and mentally draining field. Excessive workloads, driven by high patient numbers and complex care needs, negatively impact nurses' job satisfaction. The purpose of this study is to identify strategies to improve the workload, work-life balance, and occupational health of oncology nurses in Türkiye by quantitatively examining their workforce profile and working conditions.

Materials-Methods: A descriptive and cross-sectional design was employed for this study. Data were collected using a survey evaluating demographics, workforce profiles, and working conditions. The study sample consisted of 258 oncology nurses recruited via the virtual snowball sampling method.

Results: The mean age of the participants was 33.9 years, with 92.2% being female and 68.6% holding a bachelor's degree. Notably, 60.5% of the nurses did not possess an oncology nursing certification. The nurses cared for an average of 10.8 patients daily. Shift work was prevalent, with 67.4% of the clinics using a shift system, and 50.0% having variable shift schedules. The working hours and patterns were reported to have a negative impact on family life arrangements (58.5%) and the risk of medical errors (55.0%). Furthermore, 41.9% of the nurses reported experiencing health issues since they began working in the oncology unit.

Conclusion(s): Despite having a young, predominantly bachelor's-educated nursing workforce in oncology in Türkiye, there are significant gaps regarding certification and professional specialization. Heavy workloads and unpredictable shift schedules pose a threat to both employee health and patient safety. National health policies must focus on improving nurse-to-patient ratios, expanding certification programs, and prioritizing occupational health.

Keywords: Nursing, work-life balance, workload, oncology nursing

OP - 097

Xerostomia Questionnaire for Patients with Head and Neck Cancer Receiving Radiotherapy: A Turkish Validity And Reliability Study

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Objective: Xerostomia is a significant symptom frequently experienced by patients with head and neck cancer due to both the disease itself and treatment modalities. Effective management of this symptom requires accurate and reliable assessment. Since xerostomia is a subjective symptom, the use of symptom-specific instruments that reflect patients' own experiences is essential. This study aimed to examine the validity and reliability of the Turkish version of the Xerostomia Questionnaire in patients receiving radiotherapy to the head and neck region.

Materials-Methods: This methodological study was conducted with 262 patients. Data were collected using a Patient Information Form and the Xerostomia Questionnaire. Language, content, and construct validity were evaluated. Construct validity was examined using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The reliability of the scale was assessed using internal consistency analysis, Cronbach's alpha coefficient, and the test-retest method.

Results: Exploratory factor analysis revealed a single-factor structure consisting of eight items, explaining 73.48% of the total variance. According to confirmatory factor analysis results, the model demonstrated acceptable fit indices (RMSEA \leq 0.05; IFI, TLI, and CFI \geq 0.90; GFI \geq 0.85). The model fit index ($\chi^2/df = 1.691$) indicated an acceptable level of model fit. The Cronbach's alpha coefficient of the scale was 0.947. Test-retest correlations between item scores and total scores were statistically significant ($p < 0.05$).

Conclusion(s): The Turkish version of the Xerostomia Questionnaire demonstrated adequate validity and reliability. The scale can be used as a valid and reliable measurement tool to assess xerostomia in patients receiving radiotherapy to the head and neck region.

Keywords: Head and neck cancer, radiotherapy, xerostomia, validity, reliability



OP - 098

Psychosocial Effects of Gynecological Cancers on Sexual Function

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Cancer, the second leading cause of death worldwide, remains one of the most challenging public health problems today. In our country, the most common cases among gynecologic oncology patients are reported to be breast cancer (28.3%), followed by uterine cancer (6%) and ovarian cancer (4.4%). In addition to the late-onset physical side effects of cancer treatments—such as vaginal dryness, stenosis, and dyspareunia—psychosocial problems including stress, shame, deterioration in body image, and distancing from the partner are also observed. In this context, nurses should bear in mind that sexual health is not merely the absence of disease, but a state of complete physical, mental, emotional, and social well-being that encompasses safe and pleasurable experiences and directly affects an individual's quality of life. The increasing number of studies on sexual health in recent years indicates that sexual health problems have become more visible. Therefore, one way to improve the quality of life of a woman who has survived cancer is to help her regain her sexual integrity. This review aims to address the effects of psychosocial problems arising in gynecological cancers on sexual functioning.

Keywords: Sexual function, gynecological cancer, psychosocial impact



OP - 099

An Integrative Approach to Burnout Among Oncology Nurses: Mindfulness-Based Art Therapy: A Literature Review

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Oncology nursing is one of the healthcare specialties most vulnerable to burnout, driven by intense emotional labor, moral distress, and the cumulative stress of end of life care. Within Maslach's theoretical framework, burnout, which is characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, is linked to critical outcomes such as medication errors, high turnover rates, and compromised patient safety. Consequently, the demand for evidence based interventions to mitigate this burden is steadily increasing. This review aims to evaluate the potential impact of Mindfulness Based Art Therapy (MBAT) on oncology nurse burnout in light of current literature.

Mindfulness based interventions are well established approaches for reducing occupational stress and emotional exhaustion. Grounded in the practice of experiencing the present moment with a non-judgmental and accepting awareness, these interventions have been shown to lower perceived stress, enhance job satisfaction, prevent emotional exhaustion and compassion fatigue, and improve psychological resilience and sleep quality. However, challenges regarding concentration and program adherence often limit their integration into clinical practice.

At this point, art therapy functions as a complementary approach. The immersive nature of the creative process helps individuals remain grounded in the present moment while allowing for the expression of emotions without verbalization. Neurobiological evidence suggests that creative activities activate the right hemisphere of the brain, supporting cognitive reframing and adaptive coping mechanisms. Current research indicates that activities such as painting, collage, and mandala work significantly improve stress, anxiety, and depressive symptoms among healthcare professionals. Thus, art therapy represents an accessible self care strategy for nurses working under heavy emotional demands.

By integrating these two modalities, Mindfulness Based Art Therapy (MBAT) offers an innovative approach that strengthens the ability to remain present while facilitating the non-verbal expression and integration of emotional experiences. Studies across various populations demonstrate that MBAT reduces stress levels, enhances psychological wellbeing, and positively influences physiological markers like cortisol. Furthermore, literature specific to oncology nurses suggests that MBAT reduces the antecedents of burnout, namely stress and fatigue, while increasing mindfulness levels. Studies directly targeting oncology nurses and examining both interventions simultaneously remain limited. Ultimately, MBAT emerges as a holistic strategy capable of reinforcing professional identity and a sense of meaning beyond simple symptom management.

In conclusion, MBAT is a feasible and promising integrative approach for preventing burnout in oncology nursing. Integration of this intervention into clinical practice and its evaluation through large-scale randomized controlled trials are warranted.

Keywords: Art therapy, burnout, mindfulness, nurses, oncology nursing

OP - 100

Effects of Aromatherapy on Symptoms in Patients with Breast Cancer: a Systematic Review

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Symptoms such as nausea, vomiting, pain, anxiety, and sleep disturbances seen in breast cancer patients negatively affect quality of life. The inability to adequately control these symptoms despite pharmacological treatments has increased interest in complementary and alternative approaches such as aromatherapy. The aim of this systematic review is to evaluate the effect of aromatherapy intervention on symptoms in breast cancer patients. This study is a systematic review conducted in accordance with PRISMA guideline. The literature search was performed in PubMed, Web of Science, Scopus, Cochrane Library, CINAHL, and OVID databases up to April 2026. Inclusion criteria were determined within PICOS framework; randomized controlled trials and controlled clinical trials examining aromatherapy applications in women aged 18 years and older with a diagnosis of breast cancer were included. Study selection, data extraction, and methodological quality assessment were carried out independently by two researchers, and risk of bias was evaluated using Cochrane Risk of Bias tool. The protocol of this systematic review was registered in the International Prospective Register of Systematic Reviews database. A total of 14 studies involving 1,610 women were included in the systematic review. Eleven studies had a randomized controlled design, and four had a quasi-experimental design. Sample sizes ranged from 49 to 280, and most studies were conducted during chemotherapy. It was determined that aromatherapy was most frequently administered via inhalation. The most frequently evaluated outcome was anxiety; other outcomes such as quality of life, depression, pain, sleep quality, nausea, and vomiting were also examined. Aromatherapy stands out as an effective complementary method for symptom management in breast cancer patients. However, methodological differences among studies and diversity in measurement tools limit generalizability of findings. Therefore, further high-quality randomized controlled trials are needed to evaluate long-term effects and to standardize interventions.

Keywords: Anxiety, aromatherapy, breast cancer, nausea, symptom management

OP - 101

Mobile and Digital Health in Colorectal Cancer Care: A Bibliometric and Content Analysis

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Objective: Colorectal cancer remains a significant public health problem with high incidence and mortality rates globally. The aim of this study is to analyze the scientific literature on mobile and digital health in colorectal cancer using bibliometric methods, and to evaluate publication trends, leading countries and institutions, citation structure, and the temporal development of key research themes.

Materials-Methods: The Web of Science (WoS) database was systematically searched using the following search strategy: TS=((app OR application OR health OR ehealth) AND (smartphone OR mobile OR wearable OR smartwatch OR "fitness tracker") AND (colon OR colorectal OR "colo-rectal") AND (cancer OR tumor OR oncology)). Initially, a total of 331 publications were identified. After limiting document types to articles, reviews, and early access, 309 records were obtained. Studies not related to colorectal cancer, case reports, and other irrelevant publications were excluded, and 133 articles were included in the final bibliometric analysis.

Results: Publications on mobile and digital health in colorectal cancer have increased significantly over time, remaining limited until 2016 and rising rapidly after 2018, with a peak in 2025. The United States and the United Kingdom were the leading contributors, with the UK showing the highest citation impact, while China and South Korea demonstrated rapid growth in publication output. Research activity was concentrated in a limited number of institutions, particularly in Asia, with the University of Ulsan and Taipei Medical University among the most prominent. The literature was mainly published in journals such as Supportive Care in Cancer and the Journal of Clinical Oncology, with an increasing contribution from digital health-focused journals. Thematic analysis indicated a shift from cancer-focused studies toward treatment- and care-related themes, and after 2018 toward patient-centered outcomes such as quality of life, physical activity, and survival. Cluster analysis highlighted physical activity, exercise, and colorectal cancer as highly central and impactful research areas. Overall, the field is evolving into a multidisciplinary, patient-centered, and technology-driven research area.

Conclusion(s): Research on mobile and digital health in colorectal cancer has increased rapidly, and a clear transformation toward patient-oriented and technology-supported care is observed. These findings highlight the growing importance of digital interventions in improving supportive care and enhancing patient outcomes.

Keywords: Bibliometrics, colorectal neoplasms, mobile applications, telemedicine, telehealth

The Paradox of Fatigue Management in Patients with Advanced Cancer and Exercise, Telehealth, and Behavioral Strategies Supporting Quality of Life: A Structured Integrative Review

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Objective: Cancer-related fatigue (CRF) is a multidimensional symptom that is not relieved by rest and significantly impairs quality of life in patients with advanced cancer. Given its physical, emotional, and cognitive components, its management requires multicomponent nursing interventions. This integrative review aimed to evaluate the effects of exercise, telehealth, and behavioral strategies on CRF and quality of life in patients with advanced cancer.

Materials-Methods: The review was conducted in accordance with PRISMA 2020 guidelines. A comprehensive search was performed in PubMed, Web of Science, Embase, Cochrane, CINAHL, and APA PsycInfo databases for studies published between January 2020 and April 2026. Seventeen studies met the inclusion criteria and were included in the synthesis.

Results: Findings indicated that structured exercise interventions reduce fatigue and improve quality of life, particularly when tailored to patients' functional capacity, including those with metastatic disease. Telehealth-based interventions improved follow-up continuity, adherence, and access to care, especially for patients with mobility limitations. Multicomponent interventions combining exercise with cognitive behavioral therapy, energy conservation, education, and self-management support provided additional benefits in reducing symptom burden and improving psychosocial outcomes. Overall, evidence supports a shift from rest-based approaches to carefully prescribed activity combined with behavioral and remote support strategies.

Conclusion(s): In conclusion, exercise, telehealth, and behavioral interventions represent complementary components of a holistic, nurse-led fatigue management approach in advanced cancer care. Future studies should further evaluate these multicomponent interventions with quality of life as a primary outcome and support their integration into evidence-based oncology nursing practice.

Keywords: Exercise, fatigue, neoplasms, nursing, telehealth

OP - 103

Trends and Content Characteristics of Breast Cancer Studies in Nursing Journals in Türkiye: A ULAKBİM Analysis

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Objective: Breast cancer is one of the most significant global health issues affecting women's health, and scientific studies conducted in the field of nursing play a crucial role in improving care processes. This study was conducted to examine the characteristics of research on breast cancer published in nursing journals indexed in the ULAKBİM/TR Index database in Türkiye.

Materials-Methods: The study was conducted using a descriptive design and content analysis based on a literature review. Data were obtained from nursing journals indexed in the ULAKBİM/TR Index. During the screening process, searches were conducted in the title, abstract, and keywords fields using the keywords "meme kanseri," "meme hemşireliği," "breast cancer," and "breast nursing." The study population consisted of nursing journals published between 2020 and 2025 within the scope of the ULAKBİM/TR Index. A total of 3,120 articles from 20 journals were screened. The full texts of studies identified as related to breast cancer were evaluated, and 32 studies meeting the inclusion criteria were included in the analysis. Editorial articles, case reports, reviews, and short communications were excluded. Data were collected using the "Breast Cancer Article Evaluation Form" developed by the researchers and evaluated using descriptive statistics and thematic classification.

Results: It was determined that 1% of the 3,120 articles reviewed (n=32) were related to breast cancer. It was found that the majority of the studies were published in 2023 and 2024 (25%). Fifty percent of the articles were descriptive/cross-sectional in nature, and it was determined that the most frequently used data collection tools were valid and reliable standard measurement instruments (62.6%). The studies primarily focused on psychosocial processes (28.1%), early diagnosis/screening (25%), and quality of life (18.8%). Breast cancer patients (56.1%) and healthy women (18.8%) were the most common sample groups.

Conclusion(s): It was determined that the number of breast cancer studies published in nursing journals in Türkiye is limited, that they are primarily based on descriptive designs, and that they focus predominantly on psychosocial processes, early diagnosis/screening, and quality of life. The findings indicate a need to increase the number of interventional, multicenter, and clinically outcome-focused studies to strengthen evidence-based nursing practice.

Keywords: Breast cancer, breast care, content analysis, nursing, nursing research

INTRODUCTION

Breast cancer is a major type of cancer affecting one in eight women worldwide and is associated with high mortality rates (IARC, 2018; Sung et al., 2021). The continued global increase in the incidence of the disease further amplifies the burden of breast cancer at both individual and societal levels (Britt et al., 2020). In 2020, approximately 2.3 million women were diagnosed with breast cancer worldwide, accounting for about 24.5%

of all cancer cases (Lei et al., 2021). In Türkiye, breast cancer also ranks first among cancers affecting women (T.C. Sağlık Bakanlığı Türkiye Halk Sağlığı Kurumu, 2021). The World Health Organization launched the Global Breast Cancer Initiative in 2021, aiming to reduce breast cancer-related mortality through early diagnosis, effective treatment, and comprehensive care services (WHO, 2021). In the breast cancer care process, nurses undertake multidimensional responsibilities, including supporting screening programs, enhancing treatment adherence, managing symptoms, providing psychosocial support, and improving quality of life (Molassiotis et al., 2024). Therefore, nursing research in the field of breast cancer is critical for strengthening the evidence-based foundations of clinical care (Kaya et al., 2024).

In recent years, there has been a notable increase in cancer nursing research. Multidisciplinary approaches, patient-centered care models, psychosocial processes, quality of life, early detection behaviors, and the evaluation of care outcomes have become prominent areas of focus in research content (Çınar, 2020; Kaya et al., 2024; Chen et al., 2024; Liu et al., 2025).

Studies conducted in the field of breast cancer nursing in Türkiye indicate that research predominantly focuses on areas such as early detection behaviors, psychosocial adaptation, quality of life, and individual awareness levels (Bulut et al., 2024; Liu et al., 2025). Similarly, a bibliometric analysis of meta-analyses published in the field of cancer nursing in Türkiye reported that research is concentrated in specific thematic areas and that methodological diversity remains limited (Yurtsever & Karagözoğlu, 2024). This situation highlights the need for studies that systematically evaluate the scope and methodological characteristics of breast cancer research within the nursing literature (Lei et al., 2021; Bulut et al., 2024).

Identifying research trends reveals the direction of knowledge production processes in nursing and contributes to determining priority areas for future research (Kaya et al., 2024). In particular, examining studies published in national journals provides an important data source for evaluating countries' scientific production profiles (Çınar, 2020). However, there are limited studies in Türkiye that comprehensively evaluate the thematic distribution, methodological characteristics, and sample structures of breast cancer research published in nursing journals (Yurtsever & Karagözoğlu, 2024). In this context, examining the trends and content characteristics of breast cancer research published in nursing journals indexed in the ULAKBİM/TR Index in Türkiye is important for guiding future nursing research (Çınar, 2020; Kaya et al., 2024).

MATERIALS AND METHOD

Study Design and Aim: This study was conducted using a descriptive design with content analysis. The aim of the study was to examine the trends and content characteristics of breast cancer-related research published in nursing journals indexed in the ULAKBİM/TR Index database in Türkiye. **Population and Sample:** The population of the study consisted of nursing journals in the field of health sciences included in the TR Index database, a national citation and indexing system established by TÜBİTAK ULAKBİM that covers peer-reviewed academic journals published in Türkiye. The TR Index is a national database in which scientific journals from various disciplines, including health sciences, engineering, basic sciences, social sciences, dentistry, pharmacy, and veterinary medicine, are evaluated and indexed based on specific quality criteria.

The research data were obtained from the TR Index database between April 17 and April 22, 2026. After accessing the database, the "Health Sciences" category was selected from the main page, and nursing journals within this category were filtered and evaluated. A total of 20 journals identified as belonging to the field of nursing were included in the study.

The sample of the study consisted of research articles related to breast cancer published between 2020 and 2025 in nursing journals indexed in the TR Index. A total of 3,120 articles published within the specified time frame in the 20 identified nursing journals were systematically reviewed. During the screening process, searches were conducted in the title, abstract, and keywords fields using the keywords "meme kanseri," "meme hemşireliği," "breast cancer," and "breast nursing." Studies identified through these keywords were initially evaluated at the title and abstract level, and those considered relevant to breast cancer were further examined in full text. Following the full-text review, studies were reassessed for their relevance to the research scope, and a total of 32 research articles meeting the inclusion criteria were included in the sample.

Studies published as research articles, directly related to breast cancer, and conducted within the field of nursing were included in the study. Studies not directly related to breast cancer, those conducted by other disciplines without relevance to nursing, as well as editorial articles, review articles, case reports, and short communications were excluded.

Data Collection Tool: Data were collected using the “Breast Cancer Article Evaluation Form” developed by the researchers in accordance with the literature. The form consisted of two main sections. The first section included descriptive characteristics of the studies, such as publication year, author information, and journal name. The second section included variables to determine the methodological and thematic characteristics of the studies. Within this section, studies were systematically evaluated in terms of research type (descriptive, cross-sectional, experimental, quasi-experimental, randomized controlled trial, qualitative study, methodological study), data collection tools (questionnaire, standardized scale, interview, observation), research area (psychosocial processes, symptom management, early diagnosis and screening, quality of life, education/awareness, clinical care practices), sample group (breast cancer patients, healthy individuals, nurses, patient relatives, nursing students), research aim, and thematic focus (e.g., professional perception and professionalism, effectiveness of education/intervention, level of knowledge and awareness). The variables included in the form were categorized to reveal the methodological distribution and thematic trends of breast cancer nursing research. During the thematic classification process, frequently studied research topics and the core focus areas of nursing care were taken into consideration. To ensure content validity of the data collection form, the classification of studies was conducted independently by the researchers during the data collection process. The evaluations were compared, consensus was achieved, and discrepancies were resolved through discussion, leading to the final version of the classifications. This process was conducted to enhance the reliability of the study and to reduce potential bias in the evaluation process.

Data Analysis: The data obtained from the study were analyzed using descriptive statistical methods. Findings related to publication year, study design, sample characteristics, data collection tools, and topic distribution were evaluated using frequency and percentage values. In addition, the topics of the reviewed studies were analyzed using thematic classification to identify research trends.

Ethical Considerations: As the study is a document analysis based on the review of published scientific articles, ethics committee approval was not required. All data used in the study were obtained from open-access scientific sources, and no individual participant data were included.

RESULTS

A total of 3,120 articles published in nursing journals indexed in the ULAKBİM/TR Index were reviewed, and only 32 of these (1%) were found to be related to breast cancer. When the distribution of the studies by year was examined, breast cancer-related research was most frequently published in 2023 and 2024 (25%). This was followed by 2022 (15.6%), 2021 (12.5%), and 2025 (12.5%), while the lowest number of studies was published in 2020 (9.4%). These findings indicate an increasing trend in breast cancer nursing research, particularly in recent years (Table 1).

When the distribution of studies by journal was examined, it was found that the highest proportion of articles was published in the Journal of Education and Research in Nursing (JERN) (21.9%). This was followed by the Florence Nightingale Journal of Nursing (18.8%) and Türkiye Klinikleri Journal of Nursing Sciences (15.6%). In addition, 9.4% of the studies were published in the Anadolu Journal of Nursing and Health Sciences, Journal of Nursing Science, and Ordu University Journal of Nursing Studies. The proportion of studies published in the Ege University Faculty of Nursing Journal and the Journal of Psychiatric Nursing was 6.3%, while 3.1% were published in the University of Health Sciences Journal of Nursing (Table 2).

Table 1. Distribution of Studies by Year

Year	Sample Size (n)	Percentage (%)
2020	3	9.4
2021	4	12.5
2022	5	15.6
2023	8	25.0
2024	8	25.0
2025	4	12.5

Table 2. Distribution of Studies by Journal

Journal	Sample Size (n)	Percentage (%)
Journal of Education and Research in Nursing (JERN)	7	21.9
Florence Nightingale Journal of Nursing	6	18.8
Turkey Clinics Journal of Nursing Sciences	5	15.6
Anatolian Journal of Nursing and Health Sciences*	3	9.4
Journal of Nursing Science	3	9.4
Ordu University Journal of Nursing Studies	3	9.4
Ege University Journal of the Faculty of Nursing	2	6.3
Journal of Psychiatric Nursing	2	6.3
University of Health Sciences Journal of Nursing	1	3.1

*The Anatolian Journal of Nursing and Health Sciences will continue its publication under the name Journal of Nursology

Half of the studies employed descriptive/cross-sectional designs (50%), followed by quasi-experimental, methodological, and qualitative studies (12.5% each). Experimental/randomized controlled studies accounted for 6.3%, while mixed-method and retrospective studies each represented 3.1%. Research topics primarily focused on psychosocial processes (28.1%) and early diagnosis/screening (25.0%), followed by quality of life (18.8%), education/awareness (15.6%), symptom management (15.6%), and clinical care practices (9.4%) (Table 3)

When the distribution of studies by sample groups was examined, it was found that the majority of the studies were conducted with breast cancer patients (56.1%). In addition, studies were also conducted with healthy women (18.8%), nursing students (9.4%), survivors (6.3%), mixed cancer groups (6.3%), and nurses (3.1%). When the data collection tools used in the studies were examined, it was determined that validated and reliable standardized scales were used in the majority of the studies (62.5%). In addition, questionnaires/information forms (25.0%) and semi-structured interview techniques (12.5%) were also used as data collection tools (Table 4).

Table 3. Distribution of Studies by Research Type and Research Field

Research Type	Sample Size (n)	Percentage (%)
Descriptive / cross-sectional	16	50
Semi-experimental	4	12.5
Experimental / randomized	2	6.3
Methodological	4	12.5
Qualitative (including phenomenological)	4	12.5
Mixed method	1	3.1
Retrospective data analysis	1	3.1

Research Field	(n)	(%)
Psychosocial processes	9	28.1
Early diagnosis / screening	8	25.0
Quality of life	6	18.8
Education / Awareness	5	15.6
Symptom management	5	15.6
Clinical care practices	3	9.4

*The Anatolian Journal of Nursing and Health Sciences will continue its publication under the name Journal of Nursology

Table 3. Sample Group of Studies and Distribution of Data Collection Instruments⁴

Sample Group	Sample Size (n)	Percentage (%)
Breast cancer patients	18	56.1
Healthy women	6	18.8
Nursing students	3	9.4
Survivor people	2	6.3
Nurses	1	3.1
Mixed cancer group	2	6.3

Data Collection Instruments	(n)	(%)
Standard scale	20	62.5
Survey / Information Form	8	25.0
Semi-structured interview	4	12.5

DISCUSSION

Only 1% of the 3,120 articles published in nursing journals indexed in the TR Index between 2020 and 2025 focused on breast cancer. Although breast cancer is the most common cancer among women both in Türkiye and worldwide, this finding suggests that it remains relatively underrepresented in the national nursing literature. In contrast, international studies have reported a substantial increase in cancer nursing research in recent years, particularly in areas such as symptom management, quality of life, patient outcomes, and supportive care (Kaya et al., 2024; Liu et al., 2025). The discrepancy between national and international publication trends may be partly explained by researchers' preference for publishing in internationally indexed journals to achieve greater visibility and citation impact.

The distribution of studies by year demonstrated a noticeable increase in breast cancer nursing research, especially in 2023 and 2024. This finding is consistent with international evidence showing that cancer nursing research has expanded considerably in recent years, with increasing attention given to patient-centered care, survivorship, psychosocial support, and quality-of-life outcomes (Molassiotis et al., 2024). The observed increase may reflect growing awareness of the importance of comprehensive cancer care and the expanding role of nurses in supporting patients throughout the cancer trajectory.

Regarding research methodology, descriptive and cross-sectional studies constituted approximately half of all publications. Similar trends have been reported in previous bibliometric studies examining breast cancer and cancer nursing research (Çınar, 2020; Liu et al., 2025). While descriptive studies provide valuable information about patient experiences, symptom burden, psychosocial adaptation, and quality of life, the relatively small number of intervention-based and randomized controlled studies highlights an important gap in the literature. Strengthening evidence-based nursing practice requires a greater emphasis on experimental, quasi-experimental, and multicenter studies capable of evaluating the effectiveness of nursing interventions.

Breast cancer care extends beyond disease treatment and includes symptom management, psychosocial adaptation, patient education, self-management, quality of life, and survivorship care. Therefore, future nursing research should increasingly focus on intervention studies that can generate stronger evidence to support clinical decision-making and improve patient outcomes.

Analysis of research topics revealed that psychosocial processes and early diagnosis/screening behaviors were the most frequently investigated areas. This finding aligns with international research indicating that psychosocial adaptation, illness perception, self-management, and quality of life are among the major themes in breast cancer nursing research (Chen et al., 2024). Similarly, a review of doctoral theses conducted in Türkiye reported that breast cancer nursing studies predominantly focus on psychosocial adaptation, quality of life, and early detection behaviors (Bulut et al., 2024). These findings suggest that supporting psychosocial well-being and promoting early detection continue to be central priorities within breast cancer nursing practice.

The majority of studies were conducted with breast cancer patients, reflecting the patient-centered nature of cancer nursing research (Molassiotis et al., 2024; Kaya et al., 2024). Previous studies have similarly emphasized patients' care needs, symptom experiences, quality of life, and psychosocial adaptation processes (Çınar, 2020; Liu et al., 2025). However, the limited number of studies involving nurses, caregivers, family members, and other stakeholders indicates a need for broader research perspectives. Given the multidimensional nature of breast cancer care, increasing research involving caregivers and family members may contribute to a more comprehensive understanding of supportive and holistic care. This recommendation is supported by recent evidence highlighting the growing importance of caregiver burden and spousal support in breast cancer management (Liu et al., 2025).

Finally, standardized scales were the most commonly used data collection tools. The widespread use of validated instruments facilitates the generation of reliable, measurable, and comparable data across studies. However, the relatively limited use of qualitative methods may restrict a deeper understanding of patients' lived experiences and care needs. Previous studies have emphasized the value of qualitative approaches in exploring self-management, psychosocial adaptation, and care experiences among breast cancer patients (Chen et al., 2024). Therefore, increasing the use of qualitative and mixed-method designs may provide richer insights into the complex and multidimensional experiences of individuals affected by breast cancer.

CONCLUSION

This study demonstrated that the number of breast cancer-related studies published in nursing journals in Türkiye is limited, that most studies are based on descriptive research designs, and that they predominantly focus on psychosocial processes, early diagnosis/screening behaviors, and quality of life. Although these findings indicate that key aspects of breast cancer care are addressed, they also reveal limited methodological diversity and a lack of clinically outcome-focused research. The limited number of interventional and multicenter studies represents an important area for development in strengthening evidence-based nursing practice. Accordingly, it is recommended to increase studies focusing on clinical outcomes, incorporating multidisciplinary collaboration, and including diverse sample groups in the breast cancer care process.

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Effectiveness of Web-Based Mindfulness-Based Interventions on Fatigue and Sleep Quality in Patients With Cancer: A Systematic Review and Meta-Analysis

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Objective: Mindfulness-based interventions (MBIs) have emerged as an effective complementary therapy aimed at improving psychological well-being and reducing stress levels. This systematic review and meta-analysis aims to systematically evaluate and quantitatively synthesize evidence regarding the effectiveness of web-based MBIs for fatigue and sleep quality in patients with cancer.

Materials-Methods: In accordance with the PRISMA guidelines, a systematic search was conducted across the Web of Science, PubMed, the Cochrane Library, and Scopus. We included randomised controlled trials and quasi-experimental studies investigating web-based MBIs. The data were synthesised using a random-effects model with effect sizes calculated as the standardised mean difference (SMD).

Results: Eight studies involving 1,110 participants were analysed. Web-based MBIs yielded a statistically significant and substantial reduction in CRF (SMD = -0.86; 95% CI: -1.37, -0.35; $p = 0.001$), although heterogeneity was high ($I^2 = 94\%$). Sleep quality showed a significant improvement, with a small-to-moderate effect size (SMD = -0.31; 95% CI: -0.50, -0.12; $p = 0.0007$). While there were significant improvements in sleep quality immediately after the intervention and at the short-term follow-up, these were not sustained over the long term. Secondary analyses revealed consistent, moderate, and statistically significant reductions in anxiety and depression across all follow-up periods.

Conclusion(s): Web-based MBIs offer a potent, scalable, and accessible strategy for managing oncological symptom burden. These interventions are particularly effective for psychological distress and CRF. However, high heterogeneity in fatigue and diminishing long-term sleep benefits necessitate standardized, high-quality trials and hybrid-delivery models to ensure sustained clinical outcomes.

Keywords: Cancer, web-based interventions, fatigue, sleep quality, meta-analysis

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Artificial Intelligence in the Management of Post-Breast Cancer Surgery Lymphedema: A Comparative Evaluation Based on Patient Questions

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Objective: Lymphedema following breast cancer surgery is a significant complication that negatively affects patients' physical functioning and quality of life. Accurate and reliable patient education is essential for preventing lymphedema, recognizing early symptoms, and supporting effective management. This study comparatively evaluated responses generated by large language model-based artificial intelligence (AI) chatbots to patient-centered questions on post-breast cancer surgery lymphedema management in terms of accuracy, comprehensiveness, reliability, and readability.

Materials-Methods: A total of 21 patient-centered questions regarding lymphedema management after breast cancer surgery were compiled and posed in a standardized format to three publicly accessible AI chatbots—ChatGPT, Google Gemini, and Claude—on April 20, 2026, using separate new chat sessions. Responses were evaluated using a researcher-developed structured assessment form and the DISCERN instrument. Readability was assessed using the Flesch Reading Ease Score, Ateşman Readability Score and Flesch-Kincaid Grade Level indices. Evaluations were conducted independently and in a blinded manner by an academic nurse experienced in breast surgery, a breast care nurse, and a breast surgeon. Inter-rater agreement was assessed using a two-way random-effects model with absolute agreement based on mean measures in the intraclass correlation coefficient (ICC) analysis.

Results: Responses to 21 patient-centered questions were analyzed. The mean quality assessment scores were 80.66% for ChatGPT, 91.34% for Google Gemini, and 91.34% for Claude, with no statistically significant difference among overall quality scores (Friedman test: $\chi^2 = 0.545$; $df = 2$; $p = 0.761$). The DISCERN evaluation indicated that Claude achieved the highest mean score (Total score = 70). A statistically significant difference was found among Ateşman readability scores (Friedman test: $\chi^2 = 6.000$, $p = 0.050$), with Claude demonstrating the highest readability (Total score = 62.5). Inter-rater agreement was excellent (ICC = 0.91, 95% CI = 0.84–0.96, $p < 0.001$).

Conclusion(s): AI chatbots generally generated high-quality responses to patient questions on lymphedema management; however, information quality and reliability varied by model. Although overall quality performance was similar across tools, DISCERN results indicated higher scores for Claude. These findings suggest that AI chatbots may support patient education, but their outputs should be carefully evaluated before clinical use.

Keywords: Artificial intelligence, breast cancer, nursing, lymphedema, patient education



INTRODUCTION

Surgical interventions constitute the main and often first line treatment approach in breast cancer management, depending on the stage of the disease and tumor characteristics (Sung et al., 2021). Complications that may develop following breast cancer surgery can significantly affect patients' physical functioning, activities of daily living, and quality of life (Runowicz et al., 2016). One of these complications, lymphedema, is an important condition that requires long-term follow-up and directly affects patients' self-management skills (ISL, 2020). The early detection, prevention, and management of lymphedema require a multidisciplinary approach, and effective patient education is considered one of the fundamental components of this process (NCCN, 2024).

In recent years, a significant transformation has occurred in health information-seeking behaviors, and patients are increasingly turning to digital information sources in addition to healthcare professionals (Goldy et al., 2018; Haltaufderheide et al., 2024). In particular, large language model (LLM)-based artificial intelligence (AI) chatbots have emerged as important sources of information in patient education and clinical decision support processes in healthcare (Johnson et al., 2021; Hirani et al., 2024). These tools have gained prominence as information sources in patient education processes due to their ability to provide rapid and accessible responses to health-related questions (Goodman et al., 2023). In addition, the use of reliable and accessible digital information sources is becoming increasingly important for nurses, who play an active role in patient education and counseling processes (Topaz & Pruinelli, 2017; Yalcinkaya et al., 2024). The literature indicates that the most frequently used AI tool in nursing research is ChatGPT (95.7%), followed by Gemini (8.7%) and Claude (7.6%) (Park et al., 2024). With the increasing prevalence of AI-based chatbots in healthcare, their potential role in meeting the information needs of oncology patients has begun to be investigated (Boie et al., 2025; Leong et al., 2026). Studies conducted in the field of breast cancer suggest that although AI-based chatbot responses to patient questions are generally understandable and accessible, they should be evaluated in terms of clinical accuracy and evidence-based content (Gummadi et al., 2024; Boie et al., 2025).

Existing studies have predominantly focused on general breast cancer information, clinical decision support processes, and the accuracy of oncology-related information, and it is observed that studies comparing AI-based chatbot responses to patient questions regarding the management of complications following breast cancer surgery are limited (Deng et al., 2024; Gummadi et al., 2024; Irmici et al., 2024). In particular, studies that comparatively examine how AI-based chatbots respond to patient questions related to the management of lymphedema, which is common in the postoperative period and critical for patients' self-management skills, are limited in the literature (Irmici et al., 2024; Bayley et al., 2025). This study aims to comparatively evaluate the responses provided by ChatGPT, Gemini, and Claude to guideline-based patient questions regarding lymphedema management following breast cancer surgery in terms of accuracy, comprehensiveness, and guideline adherence. This study is expected to contribute to determining the reliability of AI-based chatbots for patient education, thereby supporting patient education processes in clinical practice and contributing to the evaluation of reliable information sources within the scope of digital health literacy.

MATERIALS AND METHODS

Study Design and Aim: This study was conducted using a comparative and descriptive design. The aim of this study was to comparatively evaluate the responses generated by AI-based chatbots regarding the management of lymphedema following breast cancer surgery in terms of accuracy, comprehensiveness, evidence-based appropriateness, understandability, applicability, and patient safety.

Artificial Intelligence Systems Used in the Study: Within the scope of the study, LLM-based AI chatbots that are widely used in the healthcare field and publicly accessible—ChatGPT (OpenAI, GPT-5 series), Google Gemini (Gemini Advanced), and Claude (Claude 3 series)—were evaluated. These chatbots are among the current and widely used models within generative AI technologies based on natural language processing and have increasing potential for use in areas such as health information delivery, patient education, and clinical content generation (Chow ve Li, 2025; Huo ve ark., 2025).

The AI systems included in the study were selected because they are transformer-based models pre-trained on large datasets and capable of generating contextually meaningful responses to free-text user inputs (Zhao ve ark., 2025). It has been reported that these systems can be used in the provision of health information in areas such as patient education, symptom assessment, and general information regarding treatment (Chow ve Li, 2025).

Data Collection Process: In this study, a standardized question set was developed based on patient questions in order to evaluate the responses of AI-based chatbots regarding lymphedema management. While preparing the research questions, recommendations published by international evidence-based guidelines for the prevention and management of breast cancer-related lymphedema, including the International Society of Lymphology (ISL), Academy of Oncologic Physical Therapy (APTA), Oncology Nursing Society (ONS), American Cancer Society/American Society of Clinical Oncology (ACS/ASCO) Breast Cancer Survivorship Care Guideline, and National Comprehensive Cancer Network (NCCN), were utilized. To ensure the clinical applicability of the question set and to reflect real-life information needs, frequently asked questions directed by patients in breast cancer patient support groups and social media platforms were also examined in line with studies investigating patients' health information-seeking behaviors. During this process, the selection of questions representing the patient perspective was reviewed by the researchers in terms of clinical appropriateness.

Question Sample Size: The question sample used in the study consisted of 21 patient-centered questions selected through purposive sampling to reflect patients' information needs regarding lymphedema management. Questions directly related to the development, early symptoms, prevention, and self-management of lymphedema following breast cancer surgery, with the potential to influence clinical decision-making or patient behavior and comparable with evidence-based recommendations, were included. Ambiguous questions with multiple meanings, questions requiring subjective interpretation, statements lacking clinical content, and those not directly related to lymphedema management were excluded. Although the sample size may appear limited, it is consistent with the exploratory and comparative nature of the study. Previous methodological studies evaluating the response performance of AI-based chatbots in healthcare have also reported the use of question sets of similar size (Ayers ve ark., 2023; Kung ve ark., 2023).

Some items included in the question set were revised by the researchers for clarity and grammatical appropriateness to enhance accurate interpretation by AI systems. The primary objective in constructing the questions was to evaluate the response generation performance of AI systems through patient-centered queries representing real-life information needs frequently expressed by patients regarding the development and management of lymphedema following breast cancer surgery.

Question Submission and Retrieval of AI Responses: To ensure comparability, the entire data collection process was conducted within the same time frame (April 20, 2026), and the questions were posed to each AI system using identical wording through independent sessions. A separate chat session ("new chat") was initiated for each question to prevent the influence of prior interactions. No guiding feedback, additional explanations, or follow-up questions were provided during the data collection process. Thus, the responses obtained were generated solely based on the existing knowledge base of the respective AI systems. All questions were submitted in the same order and in Turkish to ensure language consistency. The responses were recorded without any modification and transferred to the research dataset for analysis.

Evaluation System: A structured, multidimensional evaluation system was used to assess the quality of responses generated by AI-based chatbots regarding lymphedema management. The evaluation process was designed in two stages.

In the first stage, a structured evaluation form consisting of 10 items, developed by the researchers based on the literature and international clinical guidelines, was used. Responses were evaluated according to four main criteria: accuracy, clarity and appropriateness, comprehensiveness, and neutrality. Accuracy assessed the extent to which responses were consistent with international clinical guidelines. Clarity and appropriateness evaluated whether the responses were patient-friendly and written at an 8th-9th grade readability level. Comprehensiveness assessed the extent to which responses covered the essential components of the question. Neutrality evaluated whether responses were objective, balanced, and evidence-based. All criteria were scored using a 5-point Likert scale (1 = very poor, 5 = very good).

In the second stage, the DISCERN instrument was used as an additional tool to evaluate the quality of health information provided in the responses. The DISCERN instrument is a valid and reliable tool developed to assess the reliability of written health information and the quality of information regarding treatment options (Charnock ve ark., 1999).

The readability of the responses was analyzed using the Atesman Readability Score and Grade Level indices to evaluate patient comprehensibility. Readability analyses were conducted using an online readability assessment tool, and mean values were calculated for each AI system.

The evaluation process was conducted independently by three experts: an academic nurse with experience in breast surgery, a breast care nurse with at least five years of clinical experience, and a physician specialized in breast surgery. Prior to evaluation, all raters were informed about the evaluation criteria, and a consensus approach to scoring was established. Each rater independently evaluated the responses obtained from the AI systems. Inter-rater agreement was also analyzed.

Blinding Procedure: To reduce the risk of bias, a blinding method was applied during the evaluation process. Responses were anonymized prior to analysis, and information regarding which AI system generated the responses was removed from the evaluation forms. This ensured that raters evaluated the responses solely based on content quality and minimized potential system-related bias. Evaluations were conducted independently, and raters were not informed of each other's scores.

Statistical Analysis: Data organization and preprocessing were performed using Microsoft Excel (Microsoft Corp., Redmond, WA, USA), and statistical analyses were conducted using IBM SPSS Version 31.0 (IBM Corp., Armonk, NY, USA). Descriptive and comparative statistical methods were used. Categorical variables were presented as numbers and percentages, while continuous variables were expressed as mean and standard deviation. Since the scores obtained from the evaluation form and the DISCERN instrument were ordinal, the Kruskal–Wallis test was used for comparisons among models. When a significant difference was detected, pairwise comparisons were performed using appropriate post-hoc tests. Readability scores were analyzed as continuous variables, and one-way analysis of variance (ANOVA) was used when parametric assumptions were met; otherwise, non-parametric equivalents were applied. The Chi-square test was used to compare categorical variables such as the presence of misleading content and potentially unsafe recommendations. Inter-rater agreement was analyzed using the Intraclass Correlation Coefficient (ICC). Statistical significance was set at $p < 0.05$. **Ethical Considerations:** This study did not involve human participants and was based on the evaluation of responses generated by AI-based chat systems to patient-centered questions. Therefore, it was considered exempt from ethics committee approval. The study was conducted in accordance with the principles of scientific research and publication ethics and was planned and carried out in line with the Declaration of Helsinki.

RESULTS

Within the scope of the study, responses provided by three different AI chatbots to a total of 21 patient-centered questions regarding lymphedema management following breast cancer surgery were evaluated. When the mean total scores obtained from the overall quality assessment form were examined, Google Gemini (91.34 ± 3.06) and Claude (91.34 ± 1.16) demonstrated higher mean overall quality scores compared to ChatGPT (80.66 ± 17.24). However, no statistically significant difference was found among the groups in terms of overall quality scores (Friedman test: $\chi^2 = 0.655$; $df = 2$; $p = 0.840$).

When the mean total scores obtained using the DISCERN instrument were evaluated, the highest mean score was observed for Claude (70.00 ± 0.58). The mean DISCERN total scores of ChatGPT (62.00 ± 8.62) and Google Gemini (62.00 ± 1.53) were similar. However, no statistically significant difference was found among the groups in terms of DISCERN total scores (Friedman test: $\chi^2 = 0.545$; $df = 2$; $p = 0.761$). When the readability levels of the AI chatbots were evaluated according to the Atesman readability formula, Claude had the highest mean readability score (62.1 ± 4.1). The readability scores of ChatGPT (56.6 ± 6.5) and Google Gemini (56.5 ± 3.8) were similar. Statistical analysis revealed a significant difference among the Atesman readability scores of the AI tools (Friedman test: $\chi^2 = 6.000$; $df = 2$; $p = 0.050$).

The ICC analysis conducted to determine inter-rater agreement indicated a high level of agreement among raters for the DISCERN evaluations (ChatGPT: ICC = 0.90; Gemini: ICC = 0.91; Claude: ICC = 0.93; $p < 0.001$). The findings obtained from the comparative analyses are presented in Table 1.

When the mean scores of the DISCERN subdimensions were examined, Claude demonstrated the highest mean scores across all subdimensions. In the reliability subdimension, the mean score of Claude was 3.80 ± 0.40 , whereas the mean scores of Gemini and ChatGPT were 3.25 ± 0.72 and 3.10 ± 0.85 , respectively. In the treatment options subdimension, Claude had a mean score of 3.95 ± 0.35 , which was higher than those of Gemini (3.10 ± 0.65) and ChatGPT (3.05 ± 0.90). Similarly, in the overall quality rating subdimension, Claude achieved the highest mean score (4.35 ± 0.25), followed by Gemini (3.55 ± 0.60) and ChatGPT (3.40 ± 0.80). When the mean scores of all subdimensions were evaluated together, Claude demonstrated higher performance across all DISCERN subdimensions compared to the other models (Figure 1).

Table 1. Comparison of AI Chatbot Responses to Patient-Centered Questions in Terms of Quality, Reliability, and Readability

Evaluation Criteria	ChatGPT	Gemini	Claude	Test/P-value
	Mean±SD	Mean±SD	Mean±SD	
Overall quality score (%)	80,66 ± 17,24	91,34 ± 3,06	91,34 ± 1,16	$\chi^2 = 0,655, p = 0,840$
DISCERN total score	62.00 ± 8.62	62.00 ± 1.53	70.00 ± 0.58	$\chi^2 = 0.545, p = 0.761$
Ateşman Readability Score	56.6 ± 6.5	56.5 ± 3.8	62.1 ± 4.1	$\chi^2 = 6.000, p = 0.050$
Inter-rater reliability	0.90	0.91	0.93	$p < 0.001$

χ^2 : Friedman test, SD: Standart Deviation, $p < 0,05$.

DISCUSSION

AI-based chatbots play an important role in meeting the information needs of breast cancer patients regarding postoperative processes (Bayley et al., 2025). The findings of this study indicate that three publicly available LLM-based AI chatbots were able to generate generally high-quality responses to different patient-centered questions related to lymphedema treatment following breast cancer surgery, achieving an accuracy rate above 80%. However, the reliability and readability of the responses varied depending on the chatbot used. Although overall quality scores did not differ significantly among the chatbots, Claude achieved higher scores. The absence of a statistically significant difference in overall quality scores suggests that LLMs can generate responses with similar levels of accuracy and comprehensiveness to basic health-related questions in the context of patient education. Similarly, a study comparing responses provided by different AI tools to breast cancer-related test questions reported that the highest performance was achieved by ChatGPT (Irmici et al., 2024). In a study conducted in the field of oncologic surgery, it was emphasized that LLM-based AI chatbots may serve as supportive tools in answering cancer patients' questions and meeting their information needs; however, the reliability of the content may vary across models (Kessel et al., 2023). These findings differ from the results obtained in the present study. This difference may be attributed to variations in the training datasets of AI chatbots, differences in response generation approaches, and the evolving performance characteristics of continuously updated model architectures.

Evaluating the reliability and content quality of health information provided by AI chatbots for patient education is considered a critical criterion in determining their potential for clinical use (Boie et al., 2025; Leong et al., 2026). The findings obtained from a mixed question set derived from public datasets and specifically formulated for this study indicate that although the mean DISCERN total score of Claude was higher than that of the other models, this difference was not statistically significant. Subdimension analyses also revealed that

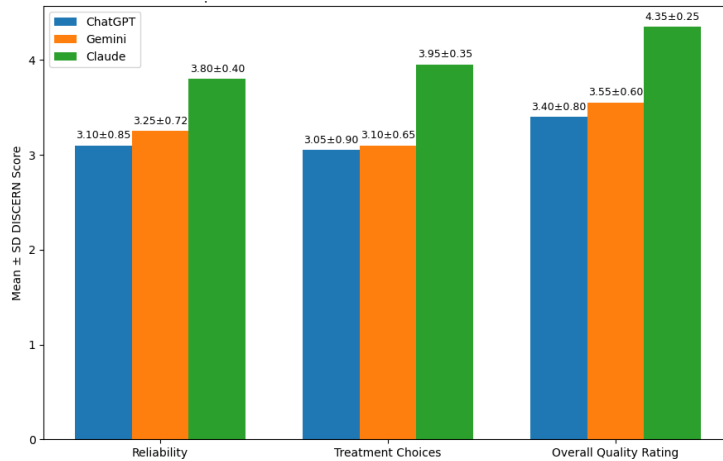


Figure 1. Comparison of AI chatbot responses to patient-centered questions in terms of quality, reliability, and readability

Claude achieved higher scores in reliability, explanation of treatment options, and overall quality assessment. In a study evaluating AI-generated responses in patients with various types of cancer, including breast cancer, ChatGPT responses to breast cancer-related patient questions were reported to have moderate-to-good DISCERN scores and to be clinically useful as a supportive information tool (Erdat et al., 2025). Similarly, a study in the field of integrative oncology reported that ChatGPT responses were generally neutral and reliable, although they had limitations in terms of citation and level of evidence (Kessel et al., 2023). When considered together, these findings differ from studies that relied solely on public datasets or newly generated question sets. The fact that previous studies were conducted using a single AI tool may have limited the reporting of sub-dimension differences across models. In the present study, the comparison of multiple tools using the same patient-centered questions may explain the higher subdimension scores observed for Claude, particularly due to its ability to present information in a more systematic and decision-supportive manner.

Readability is a key factor determining the effectiveness of patient education (Erdat et al., 2025). In clinical conditions such as lymphedema, where patients actively engage in self-care practices, the comprehensibility of information is of critical importance. One of the key findings of this study is the presence of a statistically significant difference among AI tools in terms of Atesman readability scores, with the highest readability score observed for Claude. The literature indicates that health-related responses generated by AI chatbots often require a readability level above the recommended patient education level (Erdat et al., 2025). Similarly, a study evaluating patient education content following breast cancer surgery using different AI tools reported that although the responses were accurate, the language level was too complex for most patients (Irmici et al., 2024). This finding is consistent with the literature, indicating that different LLMs may vary not only in content accuracy but also in language simplicity and patient comprehensibility when responding to the same patient-centered questions.

CONCLUSION

In this study, LLM-based AI chatbots were found to generate generally high-quality responses to patient-centered questions regarding lymphedema management following breast cancer surgery, with Claude achieving higher scores particularly in terms of content reliability and readability. AI chatbots may be used as supportive information sources in patient education processes following breast cancer surgery. However, differences in content presentation and readability across models indicate that the information provided by these tools should be evaluated by healthcare professionals before being applied in clinical practice. When planning the integration of AI-based tools into patient education processes in clinical settings, it is recommended that these systems be used as guiding and complementary resources and that their outputs be verified by experts and healthcare professionals, particularly in terms of patient safety.

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OP - 107

Investigation of the Effect of Education Given to Chemotherapy Patients on Knowledge Level

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Objective: Chemotherapy is a challenging process associated with substantial informational needs. Structured patient education can improve understanding of treatment and side effects, enhance treatment adherence, strengthen self-care skills, and support symptom management. As a key component of oncology nursing, patient education also contributes to reducing anxiety and improving quality of life. This study aimed to examine the effect of education on treatment and symptom management knowledge among patients receiving chemotherapy.

Materials-Methods: In this study, a quasi-experimental (pretest–posttest) design was used to compare the knowledge levels of patients receiving chemotherapy before and after education. Demographic data (diagnosis, age, gender, marital status, education level, and employment status) were collected using the Patient Information Form. Patients' knowledge levels were measured using the Knowledge Level Assessment Form consisting of multiple-choice questions. Some items in the form included correct statements, while others contained incorrect statements. Therefore, prior to analysis, items were recoded based on correct answers, and all items were standardized such that each correct response was assigned 1 point.

Results: The study was conducted in a private hospital with 50 volunteer patients aged between 18 and 65 who had received at least one session of chemotherapy and had no psychiatric diagnosis. Of the participants, 56% were aged between 56–65 years and 66% were female. Additionally, 36% had metastatic disease. A significant increase in patients' knowledge levels was observed after the education ($p<0.05$). Following the analysis of reverse-coded (incorrect-content) items in the Knowledge Assessment Form, it was found that correct knowledge levels increased notably after education, particularly in the areas of nutrition, side effect management, and infection prevention.

Conclusion(s): This study demonstrated that structured education provided to patients receiving chemotherapy significantly increased their knowledge levels. Education was found to be particularly effective in correcting misconceptions and guiding patients toward accurate information. It is considered that planned and standardized education provided by oncology nurses will contribute positively to patient safety, treatment adherence, and symptom management.

Keywords: Chemotherapy, health knowledge, oncology nursing, patient education as topic

Evaluation of the effect of neoadjuvant chemotherapy on postoperative wound healing in patients undergoing colorectal cancer surgery

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Objective: Wound complications following colorectal cancer surgery significantly affect morbidity and length of hospital stay. Although the effectiveness of neoadjuvant therapies in reducing tumor burden is well established, their effects on tissue healing remain controversial. Nursing care plays a crucial role in preventing surgical site infections (SSI) and wound healing complications. This study aimed to compare the postoperative wound healing process in colorectal cancer patients with and without neoadjuvant therapy and to evaluate the impact of nursing care in this process.

Materials-Methods: This retrospective, comparative, and descriptive study was conducted with 51 patients who underwent surgery for colon and rectal cancer between March 1, 2025, and February 28, 2026. Of the patients, 39.2% (n=20) received neoadjuvant therapy prior to surgery, while 60.8% (n=31) underwent direct surgical intervention. Data were obtained from patient records and the electronic data system. Demographic characteristics, diagnosis, presence of stoma, wound complications (infection, dehiscence, seroma), and length of hospital stay were evaluated. Fisher's Exact test was used for categorical variables, and the Mann-Whitney U test was used for continuous variables. A p-value of <0.05 was considered statistically significant.

Results: Of the patients, 43.1% were female and 56.9% were male; 68.6% were diagnosed with colon cancer and 31.4% with rectal cancer. A stoma was created in 58.8% of patients. Postoperative surgical site infection was observed in 35.3% (n=18) of all patients; 77.7% (n=14) of these cases were in the neoadjuvant therapy group. The infection rate was significantly higher in the neoadjuvant group (p<0.001). Wound dehiscence occurred in 13.7% (n=7) of patients, all of whom were in the neoadjuvant group (p<0.001). Seroma developed in 15.7% (n=8) of patients, with no statistically significant difference between the groups (p>0.05). The mean length of hospital stay was 15.7 days and was significantly longer in patients receiving neoadjuvant therapy (19.2 days vs 13.4 days; p<0.05).

Conclusion(s): Wound complications were more frequent and hospital stay was longer in colorectal cancer patients receiving neoadjuvant therapy. These findings highlight the need for closer wound monitoring and effective nursing care in this patient group. Standardized and individualized nursing approaches may reduce complications and improve the healing process.

Keywords: Colorectal neoplasms, neoadjuvant therapy, surgical wound infection, wound healing

INTRODUCTION

Colorectal cancer remains one of the most prevalent malignancies worldwide and constitutes a major public health concern. Surgical resection continues to be the cornerstone of curative treatment. However, postoperative complications—particularly surgical site infections and wound healing disorders—pose significant challenges that can compromise both short-term recovery and long-term outcomes. Surgical site infections are among the most common complications following colorectal surgery, owing to the inherent bacterial load of the gastrointestinal tract and the complexity of these procedures. These complications not only impair patient quality of life but also lead to prolonged hospitalization, increased healthcare costs, and delays in adjuvant treatment. Neoadjuvant therapy, including chemotherapy and radiotherapy, has become a standard component of treatment for locally advanced colorectal cancers, especially rectal cancer. Its primary goals are tumor downstaging, increased resectability, and improved oncological outcomes. However, these therapies may also interfere with normal tissue repair mechanisms. By affecting cellular proliferation, angiogen-



esis, and immune response, neoadjuvant treatments may impair wound healing and increase susceptibility to postoperative complications. Despite extensive research, the relationship between neoadjuvant therapy and wound healing remains inconclusive. Some studies report increased complication rates, while others suggest minimal or no impact. Given this variability, further investigation is needed.

This study aims to evaluate the effect of neoadjuvant therapy on postoperative wound healing in patients undergoing colorectal cancer surgery and to highlight the importance of tailored perioperative nursing care in managing these patients.

MATERIALS AND METHOD

This study was designed as a retrospective, descriptive, and comparative analysis. A total of 51 patients who underwent surgery for colorectal cancer between March 1, 2025, and February 28, 2026, were included. Patients were divided into two groups based on whether they received neoadjuvant therapy prior to surgery. Data were collected from patient records and electronic health systems. The variables analyzed included demographic characteristics, tumor localization, presence of stoma, postoperative wound complications (surgical site infection, wound dehiscence, and seroma), and length of hospital stay. Statistical analysis was performed using appropriate methods. Categorical variables were analyzed using Fisher's Exact Test, while continuous variables were evaluated using the Mann-Whitney U test. A p-value of less than 0.05 was considered statistically significant.

RESULTS

Among the 51 patients included in the study, 43.1% were female and 56.9% were male. The majority of patients were diagnosed with colon cancer (68.6%), while 31.4% had rectal cancer. A stoma was present in 58.8% of patients. Surgical site infection was observed in 35.3% of patients. Notably, 77.7% of these infections occurred in patients who received neoadjuvant therapy, representing a statistically significant difference ($p < 0.001$). Wound dehiscence was observed in 13.7% of patients and occurred exclusively in the neoadjuvant group ($p < 0.001$). In contrast, no statistically significant difference was found between the groups regarding seroma formation ($p > 0.05$). The average length of hospital stay was 15.7 days, with significantly longer stays observed in patients who received neoadjuvant therapy ($p < 0.05$).

DISCUSSION

The results of this study provide compelling evidence that neoadjuvant therapy is associated with an increased risk of postoperative wound complications in patients undergoing colorectal cancer surgery. The significantly higher rates of surgical site infections and wound dehiscence observed in the neoadjuvant group highlight an important clinical trade-off between oncological benefit and surgical recovery.

One of the most striking findings is the strong association between neoadjuvant therapy and surgical site infections. This can be largely explained by the immunosuppressive effects of chemotherapy and radiotherapy. These treatments are known to impair both innate and adaptive immune responses, reducing leukocyte function and cytokine signaling pathways essential for infection control. As a result, the body's ability to respond to bacterial contamination in the surgical field is compromised. Similar conclusions have been drawn in recent large-scale studies, which emphasize that systemic therapies significantly increase infection susceptibility in colorectal surgery patients (Calu et al., 2024; Rahimi et al., 2025).

In addition to immunosuppression, neoadjuvant therapy can negatively impact tissue perfusion and oxygenation. Radiotherapy, in particular, is associated with microvascular damage, fibrosis, and reduced capillary density. These changes impair oxygen delivery to tissues, which is a critical factor in wound healing. Oxygen plays a central role in collagen synthesis, fibroblast proliferation, and bacterial defense. Therefore, hypoxic tissue environments are more prone to delayed healing and infection (Wierdak et al., 2021; Mankarious et al., 2024).

The exclusive occurrence of wound dehiscence in the neoadjuvant group further supports the hypothesis that these therapies weaken tissue integrity. Wound dehiscence is often associated with inadequate collagen formation and reduced tensile strength. Chemotherapy agents can disrupt fibroblast activity, while radiotherapy can alter extracellular matrix composition, both of which are essential for maintaining wound stability. Studies focusing on perineal wound healing after rectal cancer surgery have similarly identified neoadjuvant therapy as a key risk factor for wound breakdown (Hákonarson et al., 2022; Zwart et al., 2025).

Interestingly, the lack of a significant difference in seroma formation between the groups suggests that not all wound complications are equally influenced by systemic therapies. Seroma formation is more closely related to surgical technique, lymphatic disruption, and dead space management. This finding indicates that while neoadjuvant therapy affects biological healing processes, mechanical factors remain dominant in certain types of complications.

Another important outcome is the prolonged hospital stay observed in patients receiving neoadjuvant therapy. This is likely a direct consequence of increased complication rates, particularly infections and delayed wound healing. Prolonged hospitalization not only affects patient well-being but also places a significant burden on healthcare systems. Previous studies have consistently shown that postoperative complications are among the strongest predictors of extended hospital stays in colorectal surgery (Cheng & Chen, 2024).

From a clinical perspective, these findings underscore the importance of risk stratification and proactive management strategies. Patients receiving neoadjuvant therapy should be considered high-risk for wound complications, and appropriate preventive measures should be implemented. These may include optimized nutritional support, strict glycemic control, enhanced infection prevention protocols, and the use of advanced wound care technologies.

One promising approach is the use of prophylactic negative-pressure wound therapy (NPWT), which has been shown to reduce surgical site infections and improve wound healing outcomes in high-risk populations. By promoting tissue perfusion, reducing edema, and removing exudate, NPWT may counteract some of the adverse effects of neoadjuvant therapy (Wierdak et al., 2021; Mankariou et al., 2024).

Equally important is the role of nursing care in this process. Nurses play a central role in perioperative management, including wound assessment, infection prevention, patient education, and early detection of complications. High-quality nursing interventions have been associated with improved surgical outcomes and reduced complication rates. This highlights the need for a multidisciplinary approach in managing patients undergoing colorectal cancer surgery (Cheng & Chen, 2024).

Despite its valuable contributions, this study has several limitations. The retrospective design limits causal inference, and the relatively small sample size may affect generalizability. Additionally, variations in neoadjuvant treatment protocols were not analyzed in detail. Future prospective studies with larger cohorts are needed to validate these findings and explore underlying mechanisms more comprehensively.

CONCLUSION

Neoadjuvant therapy in colorectal cancer patients is associated with increased postoperative wound complications and prolonged hospitalization. These findings emphasize the need for careful perioperative management, individualized care strategies, and strengthened nursing interventions to optimize patient outcomes.

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Multidisciplinary Follow-up in Head and Neck Cancers Receiving Concurrent Chemoradiotherapy: A Case Management Performance Model

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Objective: In head and neck patients receiving concomitant chemoradiotherapy (CRT), the frequency and severity of side effects affect quality of life and treatment processes, leading to increased treatment costs. Our aim is to standardize clinical outcomes through case management performance monitoring in our clinic and to evaluate and improve the quality and outcomes of patient care through proactive interventions.

Materials-Methods: A prospective evaluation of side effects was conducted in head and neck patients (n:75) receiving concomitant CRT therapy between 2022 and 2026. Indicators were established and closely monitored to measure the incidence of side effects. Each patient received pre-treatment education from the case manager regarding specific side effects and precautions during treatment. Acute side effects developing during treatment were evaluated according to CTCAE/RTOG/EORTC criteria. Patients were followed up both physically and by telephone throughout the treatment period, with weekly physician visits and at least two visits per week by the case manager.

Results: The average age of the 75 patients included in the study was 54, and 63% were male. The number of head and neck patients receiving concomitant chemoradiotherapy was 23 in 2022, 13 in 2023, 17 in 2024, 16 in 2025, and 6 in the first 3 months of 2026. The follow-up rate of the patients was 100%. Our performance indicator findings for each year are as shown in Table 1.

Conclusion(s): Case management is a cost-effective and sustainable system that improves the quality of care and patient safety through a multidisciplinary approach. As a result, improvements exceeding the target were observed in patient follow-up processes and the incidence of side effects using the case management model. Measuring and evaluating our work plays a crucial role in providing effective and efficient healthcare services.

Keywords: Chemoradiotherapy, head and neck cancer, dysphagia-mucositis, radiodermatitis, side effects

Table 1. Indicator Ratios Followed in Head and Neck Patients Receiving Concomitant Chemoradiotherapy

Indicators	Literature-Target	2022	2023	2024	2025	2026
Incidence of grade 2 and above dysphagia and mucositis	%70	%61	%62	%59	%44	%50
Incidence of 10% or more weight loss	%50	%26	%31	%35	%38	%0
Incidence of grade 2 and above radiodermatitis	%40	%22	%38	%18	%38	%33
Incidence of grade 2 and above hematological toxicity	%40	%30	%15	%29	%13	%17
Incidence of treatment interruption due to toxicity	%30-40	%9	%15	%24	%13	%17

OP - 110

Evaluation of the Effects of the Education for Managing the Side Effects of Hormonal Treatment and of the Effects of Using Cooling Pillowcases, on the Symptoms of Hot Flashes, Sleep, and Life Quality, in Women on Endocrine Therapy for Breast Cancer

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Objective: This study was conducted as a randomized controlled trial with a pre-test/post-test design to evaluate the effects of education provided to women with breast cancer undergoing hormone therapy and the use of cooling pillowcases on hot flashes, sleep quality, and quality of life.

Materials-Methods: The sample consisted of 56 patients with breast cancer receiving hormone therapy at two university hospitals. Pre-tests were administered to both groups during the first week. The intervention group received individual education and an educational guide on managing hormone therapy side effects. They were instructed to use cooling pillowcases for 8 weeks to alleviate night-time hot flashes. Data were collected using the Hot Flash Related Daily Interference Scale (HFRDIS), the Pittsburgh Sleep Quality Index (PSQI), and the Functional Assessment of Cancer Therapy- Breast Cancer Scale (FACT-B). Follow-up was conducted at weeks 3, 5, and 7 for the intervention group and at week 5 for the control group. The intervention group received a repeat education session at week 5. The final test was administered to both groups at week 9.

Results: In the intervention group, the final test scores for HFRDIS and PSQI were lower than the pre-test scores, whereas in the control group, they were higher. The total FACT-B score increased in the intervention group in the final test, whereas it decreased in the control group ($p < 0.001$). Hot flash severity in the evening was lower in the intervention group than in the control group. A statistically significant negative correlation was found between the Functional Assessment of Cancer Therapy- General (FACT-G) and FACT-B scales and PSQI scores ($p < 0.05$).

Conclusion(s): This study supports the use of cooling pillowcases, a non-pharmacological product, to decrease hot flashes experienced by breast cancer patients and improve sleep and quality of life.

Keywords: Breast cancer, cooling pillowcase, hormone therapy, hot flashes, quality of life

OP - 111

Fear of Recurrence in Pediatric Oncology: Psychosocial Impacts and Nursing Intervention Approaches

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The improvement of survival rates above 80% in pediatric oncology has made the long-term psychosocial needs of survivors increasingly visible. The most prominent of these needs is fear of recurrence, defined as intense and persistent anxiety about the possibility of disease reappearance. Current literature reports fear of recurrence in 43% to 90% of childhood cancer survivors, with significant negative effects on quality of life, emotional functioning, and family adjustment. Importantly, fear of recurrence does not decrease after treatment ends; as medical follow-up becomes less frequent and new somatic symptoms are interpreted as potential signs of relapse, it may instead become chronic.

Fear of recurrence presents differently according to the child's developmental stage. In younger children, separation anxiety and sleep disturbances are common. School-age children frequently experience hospital fear and academic difficulties, while adolescents are more likely to exhibit death anxiety, body image concerns, and social withdrawal. Among parents, fear of recurrence manifests as hypervigilance, intense stress before follow-up appointments, and burnout. It also contributes to unnecessary medical consultations and disproportionate use of healthcare services.

As the healthcare professionals with the most frequent and sustained contact with patients and families, nurses are strategically positioned to identify and manage fear of recurrence. Systematic assessment of anxiety levels, sleep patterns, and coping skills during routine clinical encounters represents the first step. Open-ended questions, active listening, and therapeutic communication allow children to express their fears and help make the emotional burden of parents visible. Age-appropriate psychoeducation about the purpose of follow-up visits and normal bodily changes reduces uncertainty and addresses the cognitive distortions that sustain fear of recurrence.

Evidence-based psychosocial interventions include play therapy, creative arts activities, relaxation exercises, and mindfulness-based practices. Cognitive-behavioral approaches provide an effective framework for restructuring dysfunctional thought patterns associated with fear of recurrence. Parental counseling, strengthening family communication, and referral to specialists when necessary are essential elements of holistic, family-centered care.

Fear of recurrence is a common and serious psychosocial problem among pediatric oncology patients and their families that requires a systematic approach. Integrating nurse-led screening, psychoeducation, and evidence-based interventions into routine clinical care can strengthen the psychological adjustment of both children and families, thereby improving the quality of survivorship. In this regard, incorporating awareness and intervention competencies related to fear of recurrence into nursing education programs and clinical protocols is of considerable importance.

Keywords: Neoplasm, nursing care, oncology nursing, recurrence, survivor



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ORAL PRESENTATIONS



SECTION 2

POSTER PRESENTATIONS

Laughter Therapy in Patients Undergoing Chemotherapy: a General Evaluation of A Complementary Approach

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This review aims to examine the effects of laughter therapy on oncology patients undergoing chemotherapy treatment. Chemotherapy is a used treatment method in cancer therapy. Patients undergoing chemotherapy may experience physiological and psychological symptoms such as pain, nausea, vomiting, fatigue, alopecia, and immune system suppression. In this context, laughter therapy, as a non-pharmacological method supporting both physiological and psychological well-being, is among the approaches that can contribute to symptom management in oncology patients. According to the National Cancer Institute, laughter therapy is defined as a complementary and alternative therapy that uses humor to help alleviate pain and stress and improve a person's well-being. Literature reports that laughter therapy physiologically improves breathing, relaxes muscles, stimulates circulation and the immune system, increases endorphin release, thereby raising the pain threshold and tolerance, strengthens mental function by lowering stress hormone levels, reduces anxiety levels, improves sleep quality, and supports psychological well-being by improving interpersonal relationships and social interaction. When the studies conducted are examined; Laughter therapy has been shown to reduce pain and fatigue and improve sleep quality in terminally ill cancer patients. A study found that laughter therapy improved the severity and duration of nausea in chemotherapy patients but had no effect on vomiting. In this study, laughter therapy given by an instructor for 20-30 minutes once a week for four weeks before chemotherapy effectively improved the health-related quality of life of cancer patients undergoing chemotherapy. As a result of this program, pain decreased, emotional functioning increased, health and quality of life improved, and symptoms such as fatigue and sleep disorders were alleviated. In the literature, laughter therapy has been shown to improve the psychological and physical well-being and quality of life of cancer patients. They found it to be a highly promising complementary therapy for improving quality.

In conclusion, laughter therapy has shown positive effects on patients undergoing chemotherapy, regarding pain, fatigue, stress, and quality of life. Current evidence suggests that laughter therapy, as a non-pharmacological and complementary approach, can contribute to symptom management and support physiological and psychological well-being.

Keywords: Laughter therapy, chemotherapy, complementary and alternative medicine

PP - 02

Analysis of Pre-Flame-Up Behaviors in Systemic Lupus Erythematosus Patients Using the Leventhal Individual Illness Perception Model: A Case Report

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Objective: The aim of this study is to examine how individuals diagnosed with Systemic Lupus Erythematosus (SLE) perceive early symptoms that appear in the pre-exacerbation period, and how these disease perceptions affect their pre-exacerbation behaviors, health-seeking tendencies, and treatment adherence within the framework of the Leventhal Individual Illness Perception Model. Furthermore, this case presentation aims to guide clinical nursing practices by highlighting the contribution of nurses' systematic assessment of disease perception to early intervention, improved treatment adherence, and prevention of complications.

Case Report: This case report describes the clinical evaluation of a 59-year-old female patient with multiple comorbidities and a predisposition to severe skin integrity impairment. The patient has a history of atrial fibrillation (AF), systemic lupus erythematosus (SLE), rheumatoid arthritis, diabetes, hypertension, and five coronary stents. She developed skin damage and pressure ulcers due to hot water contact during robotic physical therapy abroad and was subsequently brought to Turkey for treatment and rehabilitation. Upon admission, she presented with skin tenderness, widespread ecchymoses due to minimal trauma, edema at the level of +2/+3 (pitted in the eye), and AF attacks. Physical examination revealed stage 1 pressure ulcers on the left lower abdomen and the dorsum of the left foot, loss of muscle strength in the lower extremities, and difficulty with mobilization. A chest X-ray showed bronchovascular prominence, suspected pleural effusion, and cardiac enlargement. Laboratory results showed elevated CRP and increased neutrophil count, suggesting a possible infection. The patient's treatment included cardiological monitoring, skin-protective care, repositioning every two hours, pressure-reducing support surfaces, and a protein-supplemented cardiac-diabetic nutrition plan. However, the patient experienced intermittent medication refusal, treatment non-compliance. The nursing care process was evaluated within framework of the Leventhal Individual Illness Perception Model, it was determined that the patient misinterpreted symptoms, had a weak perception of disease control, and that this affected treatment adherence. Accordingly, nursing interventions supporting individual education, motivational interviewing, and active participation in the care process were planned.

Conclusion(s): This case demonstrates how multiple comorbidities, impaired disease perception accompanying SLE complicate the care process. Nursing care structured according to Leventhal Individual Illness Perception Model increased the patient's symptom awareness, strengthened treatment adherence, provided an opportunity for early intervention in the pre-exacerbation period. In conclusion, structuring nursing care plans for patients with SLE focus not only clinical findings but also on the cognitive dimensions of disease perception plays a critical role in reducing risk of exacerbations and improving quality of life.

Keywords: Leventhal, Individual Perception of Illness, Systemic Lupus Erythematosus, Illness Perception



PP - 04

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Cancer diagnosis and treatment are crises that create not only physical but also profound emotional, social, and existential challenges for patients and their families. The increase in survival rates with advances in cancer treatment has made the management of psychosocial problems, which directly affect quality of life, and the role of oncology nursing in this area a priority. The aim of this review study is to examine the dimensions of psychosocial distress (distress) seen in cancer patients, their coping strategies with uncertainty, and evidence-based nursing approaches in this process, in light of current literature. The literature shows that at least 30-35% of cancer patients experience significant psychiatric and psychosocial problems (anxiety, depression, adjustment disorders, etc.) at some point in the disease process. Psychosocial distress in patients: Psychosocial distress manifests itself in a multidimensional way, including impairment in role functioning, negative self-image, disruption of daily life, and chronicity of unpleasant emotions. Adaptive (functional) coping strategies developed by patients against the disease (e.g., problem-focused approach, acceptance, seeking social and emotional support) are significantly associated with higher quality of life and psychological resilience. In contrast, maladaptive (dysfunctional) strategies such as denial, cognitive avoidance, and self-blame increase feelings of uncertainty, symptom burden, and psychosocial distress. Furthermore, neurocognitive side effects from treatments such as "chemo-brain" have been found to challenge patients' daily functioning and coping capacity. Regular screening for psychosocial distress, considered the "6th vital sign" in routine oncology care, is indispensable for internationally recognized quality cancer care. Oncology nurses, at the heart of the multidisciplinary team, play a key role in screening patients for distress early on, providing accurate information and education, encouraging constructive coping mechanisms, and referring patients to specialists (triage). Structured psychosocial support, education, and communication interventions provided by nurses strengthen patients' coping skills with uncertainty and improve overall clinical outcomes.

Keywords: "Cancer", "Psychosocial Distress", "Psycho-oncology", "Psychological Resilience", "Quality of Life"



PP - 07

Non-pharmacological Methods Used During The Insertion of A Port Catheter Needle in Paediatric Cancer Patients

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One of the invasive procedures frequently performed during the treatment of childhood cancers is the insertion of a port catheter needle. This procedure is a commonly performed invasive procedure that can cause severe pain, fear and anxiety. The aim of this review is to examine the effectiveness of non-pharmacological methods used during port catheter needle insertion in paediatric cancer patients. Research indicates that non-pharmacological methods can significantly reduce pain and stress during these procedures, and it is recommended that they be used in conjunction with pharmacological methods as part of a multi-modal approach. Cognitive-behavioural techniques, distraction methods, digital games and virtual reality (VR) applications are some of the interventions found to have positive effects on pain and psychological symptoms. Conversely, there are also studies reporting that the effects of non-pharmacological methods on anxiety and fear are limited. The integration of non-pharmacological methods into clinical practice may improve children's adherence to treatment and reduce traumatic experiences. Further randomised controlled trials are required in this field.

Keywords: fear and anxiety, non-pharmacological methods, pain, pediatric cancer, port catheter

Determining the Care Burden According to the Social Support Levels of Family Caregivers of Pediatric Cancer Patients

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Every year, approximately 400,000 children and adolescents aged 0–18 years are diagnosed with cancer. Pediatric cancer diagnosis presents significant physical and psychological challenges not only for children but also for their families. Following hospital treatment, ongoing care at home becomes essential, and this responsibility is most often undertaken by mothers as primary caregivers. This caregiving role may negatively affect parents' health and quality of life.

Social support plays an important role in mitigating caregiver burden. It is typically conceptualized as support derived from family, friends, and other significant individuals such as relatives and neighbors. Previous studies have demonstrated a negative association between perceived social support and caregiver burden. In this context, social support is considered a critical factor in helping families cope with caregiving demands and maintain psychological well-being. However, levels of social support vary among families and may influence the extent of caregiver burden.

This study aimed to examine the caregiving burden of family caregivers of pediatric cancer patients according to their perceived social support levels. A cross-sectional design was used, and a total of 87 caregivers participated. Caregiving burden and perceived social support were assessed using the Caregiving Burden Scale (CBS) and the Multidimensional Scale of Perceived Social Support (MSPSS), respectively.

The mean total score of the CBS was 115.16 ± 31.15 , indicating a moderate level of caregiver burden. The mean total score of the MSPSS was 64.55 ± 19.88 , suggesting a high level of perceived social support. Correlation analysis showed significant positive relationships among all subdimensions of both caregiving burden and social support ($p < 0.001$). However, no statistically significant relationships were found between the subdimensions of caregiving burden and social support overall ($p > 0.05$).

Keywords: Pediatric Cancer, Family Caregivers, Social Support, Caregiver Burden

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The Dose-Response Relationship in Nursing Care for Surgical Oncology Patients: A Conceptual and Clinical Evaluation in Light of the Current Literature

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Cancer is a heterogeneous group of diseases characterized by uncontrolled cellular proliferation resulting from genetic and epigenetic alterations. The inactivation of tumor suppressor genes, activation of oncogenes, and epigenetic mechanisms such as DNA methylation, histone modifications, and microRNA dysregulation play a central role in malignant transformation and tumor progression. Globally, cancer incidence continues to rise, and in Turkey, it represents the second leading cause of mortality after cardiovascular diseases.

Although surgical treatment of solid tumors may offer curative potential in early-stage disease, major surgical interventions are associated with significant risks, including postoperative infection, bleeding, anastomotic leakage, and thromboembolic events. In this context, nursing care is essential for ensuring postoperative safety and preventing complications. Key nursing responsibilities include preoperative risk assessment, patient education, and psychosocial support, as well as postoperative interventions such as early mobilization, pain management, wound and drain monitoring, and infection surveillance.

Evidence indicates that nurse-to-patient ratios and staffing levels are strongly associated with patient outcomes, including mortality rates, complication rates, and length of hospital stay. Inadequate staffing and high workload conditions increase the likelihood of missed nursing care. Oncology units, in particular, present significant challenges due to high care complexity and intensive treatment regimens.

Systematic measurement of nursing care intensity is therefore essential for developing quality indicators and strengthening patient safety culture. Appropriate nursing care intensity is associated with improved clinical outcomes, including early detection of complications, timely intervention, reduced readmissions, and cost-effectiveness.

In conclusion, nursing care intensity in surgical oncology patients is a key determinant of patient safety and clinical outcomes, highlighting the need for evidence-based staffing strategies and systematic care management approaches.

Keywords: Surgical oncology, nursing care intensity, nursing workload, patient outcomes



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The Effect of Concurrent Chemoradiotherapy on Patient Quality of Life: A Review

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Cancer is a major global public health problem. Recent global mortality estimates show that three out of ten people die from cancer. Concurrent chemoradiotherapy involves administering chemotherapy drugs simultaneously with radiotherapy via oral or intravenous solutions. It reduces the risk of death by 30% to 50% and leads to an increase in the cancer survivor population. It has been widely used as an alternative or prior to surgery. It has become standard treatment for many cancers, including head and neck cancer, cervical cancer, and rectal cancer. Concurrent chemotherapy can provide better therapeutic efficacy by controlling local lesions, improving clinical symptoms, preventing distant metastasis, maximizing treatment, reducing the risk of metastasis and recurrence, and improving prognosis and quality of life. Importantly, these treatment-induced symptoms are directly linked to a decrease in quality of life (QOL) in survivors, contributing to unpleasant experiences and functional limitations. The aim of this research is to reveal the impact of concurrent chemoradiotherapy on the quality of life of patients.

Keywords: Simultaneous chemoradiotherapy, chemotherapy, quality of life

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Rapid Progression in Invasive Urothelial Carcinoma with Lung Metastasis: A Case Report

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Objective: This case report aims to present the rapid clinical deterioration, multi-system involvement, and palliative care requirements of a patient with metastatic invasive urothelial carcinoma, and to emphasize the importance of multidisciplinary and nursing care in maintaining patient comfort and quality of life.

Case Report: A 69-year-old male patient was admitted with invasive urothelial carcinoma of the left kidney. His medical history included hypertension, chronic kidney disease, liver donation (2011), and a 60 pack-year smoking history; he had quit two months prior. He had no alcohol use or drug allergies and a history of kidney stones, hernia surgery, and dental problems. Recently, he developed anorexia, dysphagia, oral ulcers, and significant weight loss (74 kg to 58 kg). Physical examination showed generalized edema, respiratory distress (SpO₂ ~80%), and severe abdominal and back pain with sleep disturbance and limited mobility. He also exhibited irritability and used singing as a coping strategy. On January 29, 2026, he presented with hematuria; evaluation revealed bilateral renal bleeding, and left nephrectomy with ureter removal was performed. After discharge, he was readmitted with back pain, and PET-CT showed lung metastasis. The disease was classified as stage IV, with suspected malignancy in the right kidney. Chemotherapy (carboplatin and gemcitabine) was initiated but discontinued due to clinical deterioration, and the patient was transferred to palliative care. During follow-up, dyspnea, massive pleural effusion, anemia (Hb: 5.6 g/dL), and thrombocytopenia (29,000/mm³) developed. A pleural catheter was inserted, and transfusions were given. Meropenem, teicoplanin, and fluconazole were started for infection control. Electrolyte imbalances (hyperkalemia, hypocalcemia, hypomagnesemia) were corrected. The patient remained conscious with stable vital signs but poor performance status.

Conclusion(s): This case highlights rapid deterioration and multi-system involvement in metastatic invasive urothelial carcinoma. In advanced stages, palliative care becomes essential due to limited curative options. Symptom control, respiratory support, infection management, transfusions, and electrolyte regulation are crucial for maintaining stability. Multidisciplinary care, particularly nursing interventions, plays a key role in improving comfort, addressing psychological needs, supporting coping strategies, and ensuring effective communication with the patient and family.

Keywords: Metastatic invasive, urothelial carcinoma, Lung metastasis

Digital Technologies for Pain Assessment in Adult Cancer Patients: A Comprehensive Review

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This review aims to examine digital methods used in the assessment and monitoring of pain in adult patients with cancer. Cancer pain is a multidimensional symptom that significantly affects patients' quality of life and requires continuous monitoring due to its dynamic nature. Limitations of traditional assessment methods, particularly recall bias and intermittent data collection, have highlighted the importance of digital health technologies. Within the scope of this review, a literature search was conducted in PubMed and Web of Science databases using the following keywords: ("cancer pain" AND "pain assessment" AND "nursing") AND ("digital health" OR "ePRO" OR "mHealth" OR "artificial intelligence" OR "wearable devices"). Digital technologies include mobile health and web-based applications, wearable technologies, artificial intelligence and machine learning, virtual reality applications, visual pain mapping systems, and telehealth solutions. Electronic patient-reported outcomes (ePRO) and tablet/web-based systems enable objective assessment of pain localization and distribution through digital body maps. Mobile health applications allow real-time monitoring of pain intensity, medication use, and breakthrough pain episodes using momentary assessment approaches. Wearable devices contribute to objective pain assessment by tracking physiological parameters, while artificial intelligence-based systems can evaluate pain through facial expressions, particularly in patients with communication difficulties, and provide risk prediction. Telehealth applications and instant messaging modules enhance nurse-patient communication and improve symptom management effectiveness. In conclusion, the clinical effectiveness of digital systems is closely related to their integration into nursing workflows, the presence of automated alert mechanisms, and nurse-led care models. Digital health technologies provide continuous, individualized, and proactive care in the assessment of cancer pain, leading to a significant transformation in oncology nursing.

Keywords: Cancer pain, Digital health, Mobile applications, Nursing, Pain assessment

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Development of Cholangitis in Advanced-Stage Colorectal Cancer: The Interventional Process and the Importance of Nursing Care

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Objective: To evaluate the underlying causes of jaundice in a patient with metastatic colorectal cancer and to emphasize the importance of timely diagnostic and therapeutic endoscopic interventions in the management of malignant biliary obstruction.

Case Report: A patient presented with abdominal pain and jaundice. The medical history revealed rectosigmoid carcinoma diagnosed in 2022, treated surgically with colostomy formation, and known liver metastases. The patient had discontinued smoking and alcohol use after 2018 and had not attended regular follow-ups. Recent symptoms included anorexia, dry mouth, pruritus, fatigue, constipation, and sleep disturbance.

On physical examination, scleral icterus, abdominal tenderness, presence of a colostomy, and visual impairment consistent with cataract were noted. The patient appeared anxious and lived with family support. Oncologic history included two sessions of transarterial radioembolization in 2024, with a third planned. The patient received chemotherapy on January 20, 2026, followed by regorafenib, which was discontinued after 21 days due to adverse effects. Prior treatments included 5-FU-based chemotherapy, irinotecan-containing regimens, and anti-EGFR therapies administered via a port catheter.

Laboratory findings demonstrated marked hepatocellular and cholestatic enzyme elevation: total bilirubin 7.81 mg/dL, direct bilirubin 5.93 mg/dL, ALT 1312 U/L, AST 683 U/L, GGT 787 U/L, and CRP 68 mg/L, showing progression compared to previous results. Based on clinical and laboratory findings, malignant biliary obstruction with possible cholangitis was considered the leading diagnosis. Differential diagnoses included choledocholithiasis and infectious cholangitis. Endoscopic ultrasound and endoscopic retrograde cholangiopancreatography were planned for both diagnosis and treatment, with percutaneous transhepatic cholangiography considered as an alternative approach if needed.

Conclusion(s): Jaundice in patients with metastatic colorectal cancer is often multifactorial and requires prompt and comprehensive evaluation. Early identification of biliary obstruction and associated complications such as cholangitis is essential. Timely use of endoscopic and interventional procedures plays a crucial role in improving clinical outcomes and reducing morbidity and mortality in this patient population.

Keywords: Metastatic colorectal cancer, jaundice, biliary obstruction, cholangitis

Assessment of Educational Needs and Individualized Educational Approaches in Oncology Patients

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Cancer is one of the most significant health problems of our time and represents a major public health concern due to its high incidence and mortality rates. The global burden of cancer continues to increase, imposing substantial physical, emotional, and economic challenges on individuals, families, communities, and healthcare systems. As a disease requiring multidisciplinary and long-term treatment, cancer care necessitates comprehensive and continuous management. Patient education is recognized as a fundamental component of care, enabling patients to actively participate in the treatment process. It plays a critical role in improving treatment adherence, facilitating early recognition of symptoms, and ensuring effective management of treatment-related side effects. In order to develop effective educational interventions for oncology patients, educational needs must be assessed through a systematic and multidimensional approach. The cancer trajectory involves complex challenges, including physical symptoms, psychological distress, changes in social roles, and treatment-related adverse effects. Therefore, patients' educational needs extend beyond simple information deficits and require a comprehensive evaluation. Effective nursing education should be designed as a dynamic and individualized process that addresses symptom management, treatment adherence, psychosocial support, and safe self-care practices, and should be continuously reassessed throughout all stages of the disease. The identification of educational needs in oncology patients should be approached holistically, taking into account health literacy levels, individual characteristics, and the stage of treatment. Educational interventions tailored to these factors have been reported to enhance patient engagement, improve treatment outcomes, and increase quality of life. In oncology care, family members and caregivers are integral to the treatment process and play a crucial role in ensuring continuity and effectiveness of care. Therefore, patient education should be planned to include not only patients but also their caregivers.

In conclusion, evidence-based patient education is a multifaceted intervention that improves symptom control, optimizes healthcare utilization, supports psychosocial well-being, and enhances long-term care outcomes. Accordingly, the systematic and continuous integration of patient education into oncology nursing practice is strongly recommended.

Keywords: Cancer, Health Literacy, Multidisciplinary, Patient Education

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Allogeneic Stem Cell Transplantation in Immune Thrombocytopenia and Nursing Management: A Case Report

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Objective: Immune Thrombocytopenia (ITP) is an autoimmune disease characterized by the production of antibodies against platelets, increasing the risk of bleeding (1,2). In cases resistant to standard treatments (refractory), Allogeneic Stem Cell Transplantation (allo-SCT) is a rare but potential treatment option (3). However, the allo-SCT process carries life-threatening risks such as febrile neutropenia (FN), graft-versus-host disease (GVHD), and sepsis (4,5). This presentation aims to emphasize the importance of nursing care in the early diagnosis of complications developing after allo-SCT and the impact of post-discharge patient education on prognosis.

Case Report: A 54-year-old male patient presented in 2011 with complaints of widespread ecchymosis and petechiae and was diagnosed with ITP via bone marrow biopsy. Between 2012 and 2022, due to lack of response to multiple treatments including steroids, intravenous immunoglobulin (IVIG), and autologous stem cell transplantation, a decision was made to proceed with allo-SCT. In the conditioning regimen, antithymocyte globulin, granulocyte-stimulating factor, and IVIG were administered. The patient underwent allo-SCT from a 9/10 HLA-matched unrelated donor. During the post-transplant period, the patient developed FN and was discharged on day +43 after appropriate antibiotic therapy.

Post-discharge, while continuing immunosuppressive therapy, the patient developed Grade 2 gastrointestinal GVHD; petechiae, purpura, and intraoral bleeding were observed. The diagnosis was confirmed by endoscopy, treatment was adjusted, and the patient was discharged again. However, in the +13th month after transplantation, the patient presented to the emergency department with complaints of FN, dyspnea, and fatigue. The patient, who was hospitalized with a preliminary diagnosis of pneumonia, required mechanical ventilation due to developing desaturation. As the clinical condition progressed, cardiac arrest occurred, and the patient died despite all interventions.

Conclusion(s): Allo-SCT, as a treatment option in patients diagnosed with ITP, carries a significant risk of morbidity. In this process, nurses play a critical role in the early detection of infection signs, monitoring GVHD symptoms, and controlling bleeding. Especially in the post-discharge period, patient education on sepsis and complication management is crucial in reducing mortality. In conclusion, for patients planned for stem cell transplantation, a multidisciplinary approach, comprehensive nursing follow-up, and discharge education are indispensable for the early management of complications.

Keywords: ITP, allogeneic stem cell transplantation, nursing care, GvHD, sepsis

Pediatric psycho-oncology and approaches to pain perception in children

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This oral presentation aims to present holistic framework emphasizing that experience of pain in childhood cancers should be addressed not merely as a biological symptom, but in conjunction with its psychological and social dimensions. Factors such as prolonged treatment processes, invasive procedures, hospitalization, isolation, and disconnection from daily life significantly reduce the quality of life for children and their caregivers; they trigger psychosocial factors such as stress, anxiety, and depression, which exacerbate the pain experience. In this context, the study addresses the re-evaluation of pain in line with the biopsychosocial model and integration of psycho-oncological approaches into the treatment process. This presentation is based on a literature review grounded in clinical observations and practical experiences conducted at KAÇUV Hope Center, KAÇUV Family Homes, and hospital departments. Pain is a subjective experience in children that involves not only sensory but also emotional and cognitive components. The perceived intensity of pain is influenced not only by biological factors such as genetic predisposition, age, and disease characteristics, but also by psychological factors: stress levels, coping skills, and belief systems, counting social determinants: culture, social support, and socioeconomic status. This multi-layered structure demonstrates that every child's pain experience is unique and that standard approaches may fall short. The paper addresses developmental differences children's pain perception, highlighting how pain perception and responses change accordance with cognitive development levels throughout the process from infancy to adolescence. Furthermore, within the framework of the concept of "pain memory," it emphasizes that repeated painful experiences can increase anxiety and avoidance behaviors through conditioning. Additionally, it notes that psychosomatic pain linked to psychological factors can arise even during pain-free medical procedures. Clinical observations and case studies indicate that children often experience fear stemming not so much from procedure itself as from feelings uncertainty, loss control, and unpreparedness. In this context, psycho-oncological approaches include interventions such as providing age-appropriate information to children, using therapeutic play techniques, supporting sense of control by offering choices, and establishing trauma-sensitive communication. Conducted through multidisciplinary teamwork, this comprehensive approach not only improves pain management but also strengthens children's emotional regulation skills and enhances their adherence to treatment. In conclusion, pain management must go beyond biological treatments; it should include developmentally sensitive and individualized interventions that address psychological and social dimensions. This approach not only reduces the experience of pain in the short term but also helps prevent adverse psychological outcomes following trauma in the long term.

Keywords: biopsychosocial model, childhood cancers, pain perception, pediatric psycho-oncology



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An Evaluation of the Effects of Psychosocial Support Services Provided in the Field of Psycho-Oncology on Client Satisfaction: The KAÇUV Case Study

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Childhood cancer is a multidimensional process that affects not only the diagnosed child but the entire family system, and psychosocial support services play a significant role in this process. This study aims to assess the satisfaction levels of clients who received psychological support services provided by the KAÇUV Psychology Unit and to examine whether this satisfaction varies according to various variables. The study, which employed a quantitative, cross-sectional, and descriptive design, included 108 clients who received psychological support services in 2025. Data were collected using an 8-item Likert-type satisfaction scale developed by the researchers and analyzed using descriptive statistics, the One-Sample T-Test, and One-Way Analysis of Variance. The findings indicate that the level of satisfaction with psychological support services is high ($p < 0.001$). Satisfaction levels did not show significant differences based on age, educational status, degree of kinship, the recipient of support, frequency of sessions, or session platform ($p > 0.05$); however, significant differences were observed based on the number of sessions, with satisfaction increasing as the number of sessions increased ($p = 0.002$). The findings highlight the importance of providing psychosocial support services in a family-based and sustainable manner.

Keywords: childhood cancer, client satisfaction, psycho-oncology, psychosocial support, service evaluation



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Home Port Needle Removal: Tele-Nursing Supported Approach

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Objective: Patients receiving continuous infusion chemotherapy via elastomeric pumps typically return to the hospital for port needle removal. This requirement may reduce patient comfort and increase healthcare utilization. Nurse-led patient education and telehealth interventions may allow selected patients to safely perform this procedure at home. Aim of this study is to evaluate the feasibility and safety of home-based port needle removal by patients following elastomeric pump chemotherapy under structured education and real-time video nursing support.

Materials-Methods: This single-center retrospective study included patients aged ≥ 18 years with gastrointestinal cancers who received elastomeric pump chemotherapy and were trained for home port needle removal. Structured nurse-led education and necessary supplies were provided. On the day of the procedure, patients removed the port needle at home under real-time video supervision via WhatsApp. Demographic, clinical, and procedural data were collected retrospectively and analyzed using descriptive statistics.

Results: Ten patients completed a total of 80 home port needle removal procedures. All procedures (100%) were successfully performed. No complications—including bleeding, leakage, difficulty removing the needle, port damage, or unplanned hospital visits—were observed. All procedures were conducted under real-time video nursing supervision.

Conclusion(s): In this small retrospective series, home-based port needle removal supported by structured education and real-time video nursing appears feasible and safe in selected patients. This approach may enhance patient comfort and reduce unnecessary hospital visits. Larger prospective studies are warranted to confirm these findings.

Keywords: Cancer, Elastomeric pump, Home care; Patient education, Port catheter

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Nursing Care Based on Orem's Self-Care Deficit Theory for Individuals Receiving Radiotherapy Treatment

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Objective: Despite the increase in cancer prevalence and technological advancements, the most commonly used treatment methods today are surgery, chemotherapy, and radiotherapy. Radiotherapy is widely used, especially in the treatment of solid tumors, either alone or in combination approaches. This treatment method aims to cause cell death by creating DNA damage in tumor cells through ionizing radiation. Although radiotherapy targets tumor tissue, it can also cause damage to surrounding healthy tissues. While targeting accuracy has been increased with advanced techniques, acute and chronic side effects related to treatment remain clinically significant. The most common of these side effects include oral mucositis, alopecia, skin reactions, fatigue, lymphedema, and nausea and vomiting. Nursing care plays a critical role in the prevention and management of side effects related to radiotherapy. In this process, the use of theoretical models as well as evidence-based practices contributes to the systematic and holistic planning of care. Orem's Self-Care Deficit Theory is a frequently used model in defining an individual's self-care needs and structuring nursing care. This study aims to plan and deliver patient care in accordance with Orem's Self-Care Deficit Theory for patients undergoing radiotherapy treatment.

Case Report: A 65-year-old patient diagnosed with a malignant brain tumor underwent surgery followed by radiotherapy, and patient data were evaluated according to Orem's Self-Care Deficit Theory. The patient's general condition was stable, and they were assessed as conscious and cooperative. Within the scope of universal self-care needs, the patient was found to have anorexia due to mucositis, changes in sleep patterns and immobility due to the hospital environment, and a risk of constipation due to insufficient fluid intake. Regarding developmental self-care needs, the patient was found to require education on managing the radiotherapy process and treatment-related side effects. Oral assessment within the scope of deviant self-care needs revealed the presence of stage III mucositis.

Conclusion(s): In a patient evaluated according to Orem's Self-Care Deficit Theory, it was determined that the patient's knowledge level regarding treatment and self-care ability increased as a result of the planned nursing interventions addressing the identified problems. The findings reveal that Orem's Self-Care Deficit Theory contributes to the systematic, planned, and individualized application of nursing care.

Keywords: Cancer, nurse, Orem's self-care deficit theory, radiotherapy

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A Urogynecological Perspective: Women with Gynecologic Cancer and Pelvic Floor Dysfunction

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The aim of this review is to evaluate pelvic floor dysfunction and its associated urogynecological outcomes in women with gynecologic cancer in light of the current literature. Pelvic floor dysfunction in women arises from weakness or dysfunction of the pelvic floor muscles and encompasses various clinical disorders, including lower urinary tract symptoms, pelvic organ prolapse, sexual dysfunction, and pelvic pain syndrome.

The literature reports that pelvic floor dysfunction is associated with gynecologic cancers. It is emphasized that urinary incontinence is one of the most common issues among pelvic floor dysfunctions in women with gynecologic cancer. It is noted that 60% of women with gynecologic cancer report at least one symptom of urinary incontinence, and 23% experience severe symptoms. Studies have found that moderate to severe urinary incontinence is more common in women with gynecologic cancer compared to healthy individuals, and the likelihood of being sexually active is lower.

Pelvic floor dysfunction in women with gynecologic cancer may be caused by the tumor itself or by treatment. Pressure from the tumor on pelvic organs or its invasion of pelvic nerves and tissues can disrupt bladder and bowel control, leading to urinary and fecal dysfunction. Treatment approaches can also cause anatomical, physiological, neuromuscular, and vascular damage to pelvic structures. Multimodal approaches, often including surgical treatment, pelvic radiation therapy, and/or chemotherapy, are commonly used in the treatment of gynecologic cancer. During hysterectomy, damage to the ligaments supporting the uterus can reduce the pelvic floor's supportive strength, potentially leading to lower urinary tract symptoms such as urinary incontinence. Additionally, damage to pelvic nerves and weakening of muscle tissue during surgery can result in colorectal symptoms such as fecal incontinence. It has been noted that radiation therapy may cause pelvic floor dysfunction by shortening the urethra, while chemotherapy may do so through systemic effects. Pelvic floor dysfunction negatively affects the physical function, social life, psychological well-being, and quality of life of women with gynecologic cancer, a vulnerable and sensitive group. This situation further compromises the overall health and well-being of women with cancer.

Consequently, pelvic floor dysfunction is a significant health issue commonly observed in women with gynecologic cancer that substantially impacts their lives. In this regard, it is recommended that awareness be raised by nurses, urogynecological symptoms experienced by women with gynecologic cancer be assessed in accordance with evidence-based guidelines, be prevented, individualized care be provided, and multidisciplinary approaches be strengthened.

Keywords: Nursing, gynecology, cancer, pelvic floor dysfunction, urogynecology

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Extravasation During Chemotherapy Administration: A Case Report

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Objective: Extravasation is an important complication that occurs when intravenously administered drugs leak into surrounding tissues, potentially leading to outcomes ranging from mild irritation to severe tissue necrosis. (Genç, 2025, p.11). Chemotherapeutic agents are classified as vesicants, irritants, or non-vesicants based on their potential to cause tissue damage. Among these, anthracycline group vesicant drugs, such as doxorubicin (Adriamycin), are particularly associated with severe local tissue injury in cases of extravasation. (Demirel et al., 2015). This case report presents an instance of extravasation that developed during Adriamycin infusion and discusses the corresponding nursing management.

Case Report: A.A., a 73-year-old woman, was diagnosed with a malignant neoplasm of abdominal connective and soft tissue and was receiving adjuvant chemotherapy. A treatment plan consisting of four cycles of the IMA protocol, including ifosfamide, Adriamycin, and mesna, was initiated.

During the first cycle, chemotherapy was administered via a 22-gauge peripheral intravenous catheter placed in the right upper extremity. The procedure was conducted under double nurse verification, and blood return was confirmed prior to infusion. Approximately 10 minutes after the initiation of Adriamycin infusion, the patient reported a burning sensation and pain at the infusion site. Upon assessment, mild swelling and erythema were observed, raising suspicion of extravasation.

Nursing Care: The infusion was immediately discontinued, and the cannula was left in place to aspirate any residual drug. The physician was informed, and the cytotoxic extravasation protocol was promptly initiated. Cold compresses were applied to the affected area for 20–30 minutes every four hours, and the extremity was elevated. Topical hydrocortisone treatment was also planned. The incident was documented and photographed, and the patient was closely monitored for 48 hours for potential complications. Upon readmission, the patient continued to experience pain and redness, prompting a dermatological consultation. Intermittent cold application and topical corticosteroid cream were recommended. At the two-month follow-up, the patient's pain had subsided, and the erythema had significantly decreased.

Conclusion(s): Extravasation of vesicant chemotherapeutic agents such as Adriamycin can result in serious tissue damage and necrosis if not recognized early. In this case, early detection and timely nursing interventions effectively prevented severe complications. Institutional extravasation protocols, careful patient monitoring, appropriate vascular access selection, and strong team communication play a crucial role in prevention and management. Nurses have a key responsibility in ensuring patient safety throughout this process.

Keywords: Chemotherapy, extravasation, tissue

An Innovative Approach in Gynecologic Cancer Care: Patient Education and Symptom Management through Gamification

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Department of Midwifery, Faculty of Health Sciences, Istanbul Beykent University, Istanbul, Türkiye Gynecologic cancers are among the leading causes of morbidity and mortality in women and lead to multidimensional physical and psychosocial problems that negatively affect patients' quality of life. Therefore, the use of innovative approaches in patient education and symptom management has gained increasing importance. The aim of this paper is to examine the contributions of gamification based applications to patient education and symptom management in gynecologic cancer care. This study is a literature based review that addresses the challenges faced by patients with gynecologic cancer during the care process and the potential effects of gamification based interventions. In line with current studies, the theoretical foundations of gamification, its application areas, and its effects on patient outcomes were evaluated. Patients with gynecologic cancer experience not only physical symptoms such as pain, fatigue, and limited mobility, but also psychosocial problems including anxiety, depression, and social isolation. These conditions negatively affect treatment adherence and overall quality of life. Gamification is an innovative approach that increases motivation and engagement by incorporating game elements such as points, badges, rewards, feedback, and competition. The literature indicates that gamified mobile applications facilitate medication adherence, improve compliance with treatment, and support patients in taking a more active role in symptom management. In addition, gamified exercise programs have been shown to enhance physical activity and contribute to the rehabilitation process, while strengthening motivation and self efficacy in psychosocial support processes. It is emphasized that gamification based systems support sustainable learning, particularly through personalized education and feedback mechanisms. In conclusion, gamification stands out as an effective and innovative approach that supports patient education and symptom management in gynecologic cancer care. This approach has the potential to improve quality of life by increasing patients' active participation in their treatment processes. However, there is a need for large scale, randomized controlled studies to evaluate the effectiveness of gamification applications in the field of gynecologic oncology. It is recommended that healthcare professionals integrate gamification based applications into patient centered care models.

Keywords: gamification, gynecological cancers, nursing, patient education, symptom management



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Nursing Management of Immunotherapy-Induced Colitis and Acute Kidney Injury: A Case Report

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Objective: Immunotherapy has become an effective treatment modality in oncology; however, it may lead to immune-related adverse events affecting multiple organ systems. Early recognition and proper management of these toxicities are crucial. To emphasize the importance of nursing care in the early recognition and management of immunotherapy-induced colitis and acute kidney injury.

Case Report: A 66-year-old male patient with metastatic clear cell renal cell carcinoma received nivolumab and ipilimumab therapy. The first two cycles were well tolerated; however, before the third cycle, the patient developed fatigue, nausea, vomiting, and significant weight loss, with deterioration in performance status. Laboratory findings revealed elevated serum creatinine levels, and the patient was hospitalized with a preliminary diagnosis of acute kidney injury. Renal function improved following hydration therapy. During follow-up, the patient developed bloody diarrhea, and colonoscopy revealed multiple deep ulcers. After excluding infectious causes, immune-related colitis was diagnosed, and steroid therapy was initiated. Clinical symptoms improved with treatment.

Conclusion(s): Immunotherapy-related adverse events can be effectively managed with early recognition and appropriate intervention. Nurses play a critical role in symptom monitoring, maintaining fluid-electrolyte balance, and patient education, which significantly contributes to patient safety and treatment outcomes.

Keywords: acute kidney injury, colitis, immunotherapy, nursing care

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Nursing care in a patient undergoing hepatic arterial infusion chemotherapy for metastatic colon cancer: a case report

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Objective: Colorectal cancer is one of the most common malignancies worldwide, and its prognosis significantly worsens in the metastatic stage. The liver is the most frequent site of metastasis in metastatic colorectal cancer, and hepatic arterial infusion (HAI) chemotherapy is an important regional treatment option that enhances tumor control in liver-dominant disease. However, this treatment process leads to multidimensional care needs due to catheter-related complications, risk of infection, and systemic side effects.

This study aims to evaluate the nursing care process of a patient with metastatic colon cancer receiving HAI chemotherapy through a case report.

Case Report: A 58-year-old male patient was diagnosed with mucinous sigmoid colon adenocarcinoma and underwent surgical treatment. During follow-up, liver-dominant metastases were detected, and HAI chemotherapy was planned after disease progression following systemic FOLFOX + bevacizumab therapy. Due to an allergic reaction to oxaliplatin during the first administration, treatment was continued with irinotecan. After four cycles, a 35% treatment response was achieved. Upon admission to the service, the patient was hemodynamically stable, with vital signs recorded as blood pressure 138/77 mmHg, heart rate 87 beats/min, respiratory rate 18 breaths/min, and SpO₂ 99%. During the treatment process, chemotherapy was administered via a hepatic arterial catheter and port catheter, and the patient was closely monitored. Nursing care primarily focused on catheter site assessment, monitoring for infection and bleeding, and early identification and management of chemotherapy-related side effects. Hemostasis was achieved following femoral catheter removal using local compression, and distal circulation was regularly evaluated. In addition, the patient and family were educated about the treatment process, catheter care, and potential complications. Psychosocial support was provided by assessing the patient's anxiety level. The patient's care needs were addressed based on Henderson's Basic Needs Model, adopting a holistic approach.

Conclusion(s): Nursing care in patients receiving HAI chemotherapy plays a critical role in the early detection of complications, ensuring patient safety, and improving treatment adherence. This case highlights that the knowledge, skills, and clinical decision-making abilities of oncology nurses are essential in managing treatment-related complications and enhancing the quality of care. Strengthening the competencies of oncology nurses is crucial for improving patient outcomes.

Keywords: hepatic arterial infusion, nursing care, colorectal cancer, metastasis



PP - 34

Silent Risk in Cancer Treatment: Chemobrain and the Nursing Approach

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Cancer treatments, although improving survival, may lead to impairments in cognitive functions due to modalities such as chemotherapy, radiotherapy, and hormone therapy. This condition, defined as “chemobrain,” is characterized by declines in memory, attention, learning, and executive functions, and negatively affects patients' daily living activities, social relationships, and quality of life. Current literature indicates that chemobrain is not limited to chemotherapy alone, and that radiotherapy and hormone therapy may also produce similar cognitive effects. Chemobrain develops as a result of the interaction of DNA damage, oxidative stress, mitochondrial dysfunction, and inflammatory processes, which adversely affect neuronal repair and synaptic plasticity, leading to cognitive decline. Prevalence studies report that chemobrain affects a significant proportion of patients and is more frequently observed particularly in patients with breast cancer. Despite this, it is often overlooked in clinical practice, and standard assessment methods may fail to adequately reflect cognitive changes that impact daily life. Chemobrain may also negatively affect clinical outcomes by reducing treatment adherence. The aim of this review is to examine chemotherapy-related cognitive impairments and to evaluate the role of a nursing approach in this process. Therefore, early identification, monitoring, and holistic nursing approaches are of critical importance. Within the scope of the nursing approach, non-pharmacological strategies such as cognitive training, cognitive behavioral therapy, mindfulness-based interventions, and physical activity have been reported to be effective in supporting cognitive functions. In conclusion, chemobrain should be considered an important neurocognitive adverse effect that requires a multidisciplinary approach in cancer care.

Keywords: Cancer, chemobrain, cognitive impairment, nursing approach, quality of life

Artificial intelligence–based clinical decision support systems in intensive care: a literature review focusing on oncology patients

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Intensive care units are settings that require advanced levels of care, where patients' conditions may change rapidly and clinical decision-making processes must be carried out rapidly. Oncology patients admitted to and monitored in these units constitute a high-risk patient group characterized by immunosuppression, the risk of multiple organ failure, and rapid clinical changes. Therefore, early diagnosis, accurate clinical decision-making, and continuous monitoring are of great importance in the care process. In recent years, artificial intelligence–based clinical decision support systems have emerged as important tools in meeting these needs. The aim of this study is to examine the use of artificial intelligence–based clinical decision support systems in the management of oncology patients in intensive care and to evaluate their effects on nursing care in line with the literature.

Artificial intelligence–based clinical decision support systems analyze patients' vital signs and laboratory data and support clinical decisions in early warning, risk assessment, and treatment planning processes. These systems have been reported to be effective in the early detection of sepsis, acute respiratory failure, and organ dysfunction. In oncology patients monitored in intensive care, these systems facilitate the development of patient-specific treatment decisions by contributing to a comprehensive evaluation of patient data.

Intensive care nurses play a central role in the continuous monitoring of patients and in the early recognition of clinical changes. Therefore, the use of clinical decision support systems in harmony with nursing care processes is important in increasing early intervention opportunities and supporting the continuity of care. These systems may contribute to improving patient safety by supporting nurses' clinical decision-making processes.

On the other hand, artificial intelligence–based systems are emphasized as tools that support healthcare professionals rather than replacing them in clinical decision-making processes. In nursing care, these systems strengthen standard care practices and also contribute to the development of individualized care. However, ethical issues, data security, algorithmic bias, and legal responsibilities are among the important factors that limit the widespread use of these systems in clinical practice.

In conclusion, artificial intelligence–based clinical decision support systems can be considered supportive tools in the management of oncology patients in intensive care. However, more clinically based studies are needed to ensure their effective and safe use and to support their integration into nursing practice.

Keywords: Clinical decision support systems, intensive care, oncology, artificial intelligence



PP - 36

Microbiota and the Role of Nurses in Colorectal Cancers

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Cancer is a global problem that threatens human life worldwide. Recently, discussions on microbiota in colorectal cancers in various articles have caught my attention. Regular dietary fiber intake, low consumption of red and/or processed meat, adequate intake of selenium, folic acid, vitamins, and minerals, and regular physical activity are recommended to reduce the risk of colorectal cancer. I believe that microbiota is essential not only for healthy or asymptomatic individuals but also for individuals diagnosed with colorectal cancer, those undergoing treatment, or those who have recovered from colorectal cancer. Therefore, studies that include different methods regarding microbiota awareness at every stage of the prevention, diagnosis, and treatment of colorectal cancer will significantly contribute to the literature.

Keywords: Colorectal cancer, Microbiota, Nursing, Prevention and management

Evaluation of Pressure Injuries in an Oncology Inpatient Unit

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Objective: Pressure injuries are a significant care problem frequently observed in hospitalized oncology patients, negatively affecting patient comfort, treatment outcomes, and quality of life. Oncology patients often have suppressed immune systems, limited mobility, and prolonged bed rest, which increase the risk of pressure injury development. Therefore, early risk assessment, preventive care practices, and effective team coordination are critical. This study aimed to evaluate current care processes for the prevention of pressure injuries in hospitalized oncology patients and to determine the effectiveness of improvement interventions.

Material-Methods: This process evaluation study was conducted in an oncology inpatient unit. Existing practices were observed and care processes were analyzed. All nurses received training on skin integrity assessment. Daily risk assessment and skin evaluation were performed for all patients. Skin assessments of hospitalized patients were documented, and wound photographs were shared with the wound care nurse to guide individualized care planning. Preventive interventions included barrier creams, silicone dressings, and appropriate mattress support.

Results: All members of the care team completed skin assessment training, and daily evaluation practices were largely maintained. Regular care plans were created for patients, and collaboration with the wound care nurse was established. However, several gaps were identified. Alternative products were occasionally used instead of standard underpads, some patients refused preventive interventions, and pressure injury staging training had not yet been fully completed. In addition, deficiencies were observed in completing risk assessment forms.

Conclusion(s): Education, regular assessment, and a multidisciplinary approach are effective in preventing pressure injuries in oncology patients. However, to ensure sustainability of standardized practices, completion of staff training, standardization of care processes, and improvement of patient adherence are required. Process improvement initiatives can enhance the quality of care and patient safety in oncology units.

Keywords: Pressure injury, quality of care, patient safety



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The Impact of AI-Assisted Care and Digital Health Technologies on the Nursing Role in Oncology Nursing

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Objective: The aim of this study is to examine the effects of AI-assisted care applications and health technologies on the professional competence of nurses in oncology nursing. The integration of AI technologies into oncology care processes is increasing, and this study aims to investigate their benefits in nursing care. This study is a review based on a literature review. Data obtained from national and international databases were analyzed.

Results: When the literature was examined, it was determined that AI-assisted systems improved the clinical decision-making skills of oncology nurses, increased efficiency in care processes, and contributed to reducing error rates. The use of AI and health technologies is also of great importance in strengthening the role of nurses within the team and increasing their professional visibility.

Conclusion(s): AI-assisted care applications are an important digital transformation tool that improves the professional competence and increases the visibility of oncology nurses. In this regard, it is recommended that training programs be developed to enable nurses to adapt to AI technologies and that the integration of these systems into clinical environments be supported.

Keywords: Oncology nursing, artificial intelligence, digital health, professional competence

Adherence to Radiotherapy in Breast Cancer: Patient Experiences, Side Effect Management, and Multidisciplinary Care

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This study aims to comprehensively examine patient experiences, side effect management, and a multidisciplinary care approach in relation to patient compliance with the disease and treatment process during breast cancer radiotherapy, and to reveal the role of holistic care in this process. To this end, studies published in recent years in PubMed, Scopus, and Google Scholar databases were evaluated through a literature review. The radiotherapy process in breast cancer is a multifaceted and complex experience that is not limited to physical symptoms; it also includes symptoms in psychological, social, and cognitive dimensions. The most frequently reported side effects of radiotherapy are fatigue, radiodermatitis (skin reactions), pain, sleep disturbances, and emotional disturbances. These symptoms negatively affect patients' daily activities and overall quality of life. Studies show that patients often lack sufficient information about side effects, the treatment process, and self-care practices, making symptom management difficult and negatively impacting treatment compliance. Frequent factors affecting patient compliance in this process include misconceptions and lack of information about treatment, along with feelings of fear, uncertainty, and anxiety. In particular, misperceptions about the side effects of radiotherapy lead to resistance to treatment and decreased compliance. In breast cancer, the adaptation process to radiotherapy requires a holistic, multidisciplinary care approach that includes managing physical symptoms, implementing psychosocial adaptation, patient and family education, and effective communication. In a multidisciplinary approach, comprehensively addressing patients' needs will contribute to increased patient satisfaction, strengthened adherence to treatment, and improved quality of care. Accordingly, it is recommended that individualized care plans be widely adopted in radiotherapy care management, patient education be strengthened, and a team-based care approach be more effectively embraced in clinical practice.

Keywords: Patient experience, breast cancer, radiotherapy, symptom management, multidisciplinary care



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Intravenous port catheter care:3 year experience

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Objective: In recent years, randomized controlled studies have shown that venous port maintenance can be safely performed using isotonic sodium chloride instead of heparin. Based on this evidence, heparin use was discontinued in our institution for intravenous port catheter care in adult patients, and isotonic sodium chloride was implemented. The aim of this study is to determine the complication rates associated with intravenous port catheter care using isotonic sodium chloride in our institution.

Materials-Methods: Patients who had port catheters inserted between February 2014 and December 2016 at Istanbul University Oncology Institute, and whose follow-up and treatment continued at the same hospital, were included in the study. Patients' sociodemographic characteristics, venous port maintenance intervals, total follow-up duration, and complication rates were retrospectively evaluated using computer records and documentation systems.

Results: During the study period, 5895 catheter interventions were performed in 958 patients with intravenous port catheters. The mean age of the patients was 54 (minimum 14, maximum 81). Of the patients, 446 (46.6%) were female and 512 (53.4%) were male. The median follow-up duration after port insertion was 5 months (1-12 months). During the follow-up period, the median interval between applications was 14 days (1-270 days). The number of patients who attended only once per month was 124 (16.4%). As late complications, deep vein thrombosis was observed in 7 patients (0.7%) and occlusion in 5 patients (0.5%), detected at least one week after port insertion.

Conclusion(s): Our findings also support that performing venous port flushing with normal saline does not increase the risk of deep vein thrombosis and occlusion in cancer patients. Intravenous port flushing is a critical nursing intervention to prevent catheter occlusion and ensure long-term catheter function. The positive pressure technique (positive pressure flushing) plays a very important role in this process.



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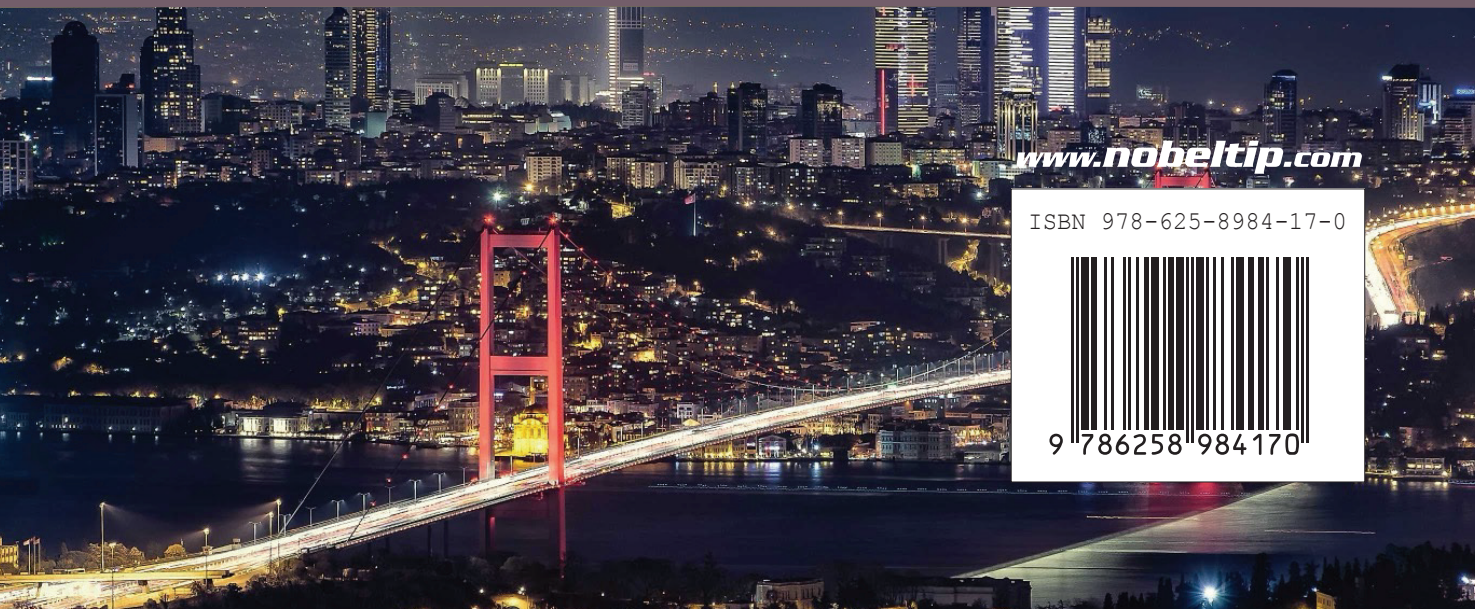
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