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Trend of Artificial Intelligence in Nursing from 2004 to 2024: A Bibliometric Analysis Based on the Web of Science

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ABSTRACT

This study aims to conduct a bibliometric analysis of studies related to artificial intelligence (AI) in the field of nursing, accessed from the Web of Science database. The search was conducted using the keywords "artificial intelligence OR ChatGPT OR Chatbot AND nursing OR nursing care AND practice OR innovation OR machine learning OR deep learning" between January 1-20, 2024. A total of 164 studies related to artificial intelligence in nursing were identified through the search. It was found that 65.85% of these studies were research articles, with the majority being published in the Journal of Nursing Management (nine studies), and the highest number of studies being published in 2023. The most prolific author, with seven studies, was identified as Rozzano Locsin, while the United States was determined to be the country with the highest number of publications, and Florida Atlantic University and Tokushima University were the institutions with the most studies. The most frequently used keyword was "artificial intelligence," with a total citation count of 1010 and an h-index of 20. The study indicates an increasing interest in AI-related nursing research, particularly in recent years, with a trend toward quantitative growth.

Keywords: Artificial intelligence, bibliometric analysis, nursing

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2004'ten 2024'e Hemşirelikte Yapay Zeka Trendi: Web of Science'a Dayalı Bibliyometrik Bir Analiz

ÖZ

Bu çalışma hemşirelik alanında yapay zeka ile ilgili yapılan çalışmaların bibliyometrik analiz yöntemiyle incelenmesini amaçlamaktadır. Çalışma verilerine ulaşmak için Web of Science kullanılmıştır. Çalışma 01- 20 Ocak 2024 tarihleri arasında "artificial intelligence OR ChatGPT OR Chatbot AND nursing OR midwifery AND practice OR innovation OR machine learning OR deep learning" anahtar kelimeleri ile taranarak elde edilmiştir. Yapılan tarama sonucunda hemşirelik alanında yapay zeka ile ilgili toplam 164 çalışmaya ulaşılmıştır. Yapılan çalışmaların %65.85'inin araştırma makalesi olduğu, en fazla Journal of Nursing Management (dokuz çalışma) adlı dergide ve en fazla çalışmanın 2023 yılında yayınlandığı belirlenmiştir. En fazla çalışması olan yazar (yedi çalışma) Rozzano Locsin, en fazla yayının yapıldığı ülke Amerika Birleşik Devletleri ve en fazla çalışmanın yapıldığı kurumlar Florida Atlantic University ve Tokushima University olarak belirlenmiştir. En fazla kullanılan anahtar kelime ''artificial intelligence'', toplam atıf sayısı 1010 ve h- indeksi 20 olarak belirlenmiştir. Hemşirelik alanında yapay zeka ile ilgili çalışmalara olan ilginin gittikçe arttığı ve özellikle son yıllarda çalışmaların nicelik bakımından gittikçe artış gösterdiği saptanmıştır.

Anahtar Kelimeler: Yapay zeka, bibliometrik analiz, hemşirelik

1 Introduction

Artificial intelligence (AI) was first defined by John McCarthy as "the science and engineering of making intelligent machines, especially intelligent computer programs" (Ahuja, 2019). Additionally, AI is defined as the ability of a machine to mimic cognitive functions such as perception, reasoning, problem-solving, and decision-making of humans (Jeong, 2020). With the invention of computers and technological advancements, interest in AI-related studies has increased, and since the 1960s, AI has been used in various sectors including finance, defense industry, control systems, computer and video games, automotive, and telecommunications systems (Akgerman, Özdemir Yavuz, Kavaslar, & Güngör, 2022).

The first applications of AI in the healthcare sector began in the 1970s. AI and robotic technologies in healthcare are used for early diagnosis, decision-making, research, treatment, education, and the maintenance of health (Büyükgöze & Dereli, 2019). A wide range of technologies such as electronic health records, prescription-writing tools, telehealth, online appointment scheduling, mobile applications, medical devices, portable monitors, smart patient beds, wearable biosensors, etc., are also utilized (Şendir & Kabuk, 2020). The rapid advancement of technology and the digitalization process in healthcare also affect nursing profession and practices, which are at the forefront of healthcare services (Çobanoğlu & Oğuzhan, 2023). Nurses play a key role in shaping and guiding the evolution of modern AI in nursing. AI in nursing is widely used in care services and education, ranging from electronic health records to mobile health, telehealth, remote patient monitoring, and patient tracking sensors (Karakaya, Akyol, & Doğan Merih, 2022). AI technologies will also help nurses integrate different types of relevant data (such as environmental, genomic, health, and socio-demographic data) and enhance nurses' capacity to provide multifaceted care (Ronquillo et al., 2021). As new and improved AI tools are developed, nurses are expected to fulfill their practitioner role, ensuring continuity of care anytime, anywhere.

The integration of AI based technologies into nursing applications has led to concerns about AI replacing human-human interaction in care and disregarding care ethics, as well as fears that it will replace nurses in clinical practice (Stokes & Palmer, 2020). Technology will change the duration nurses spend on care, but the need for nurses will always continue (Robert, 2019). One of the most effective measurement techniques in evaluating the AI trend in nursing studies is bibliometric analysis. Bibliometrics enables macroscopic and microscopic analyses of a large number of publications (research and review articles, conference papers, books, book chapters, notes, letters, errata, etc.) to obtain new information (Kokol & Vošner, 2019). Bibliometric analysis can identify the most productive authors, institutions, countries, and journals within scientific disciplines, analyze the dynamics of the literature, and examine communication and collaboration patterns among authors, as well as study its history and structure (De Bellis, 2009; Kokol & Vošner, 2019; Kokol, Vošner, & Železnik, 2017). Moreover, this method also helps identify existing gaps in research disciplines or topics (Hall et al., 2018). This study aims to provide a comprehensive overview of AI research in nursing and guide healthcare professionals in their future work.

2 Methodology

This study was conducted to examine the studies related to AI in the field of nursing using bibliometric analysis method. In line with this objective, the following questions were addressed:

•What is the type and citation characteristic of the published studies?

•What are the author characteristics of the published studies?

•What are the author keywords in the published studies?

•How is the distribution of published studies over the years?

•How is the distribution of published studies by countries and institutions?

•How is the distribution of published studies by journals?

The study data was obtained by searching with the keywords "(artificial intelligence OR ChatGPT OR Chatbot) and (nursing OR nursing care) and (practice OR innovation OR machine learning OR deep learning)" between January 01-20, 2024. The obtained studies without a year limitation were recorded in the data collection form. A total of 164 studies related to AI in nursing were reached. The studies obtained from the search results were examined based on their titles and abstracts.

2.1 Data Evaluation

Bibliometric analysis method was used in the evaluation of the data. The data obtained on publication trends and citation network were analysed using Excel program. Number and percentage were used in the analysis of the data. Bibliometrics is a quantitative tool used to analyse bibliographic data and has gained popularity with its applications in various fields (Ellegaard & Wallin, 2015). Databases such as Web of Science, Google Scholar, PUBMED, Scopus, and EMBASE are used. While Web of Science, Scopus, and Google Scholar cover all scientific disciplines, PUBMED and EMBASE only cover scientific data in medical sciences (Burmaoğlu, Kıdak, Haydar, & Demir, 2016; Khare, Leaman, & Lu, 2014; Özkaya & Körükcü, 2023). VOSviewer software was used to visualize the network structure of keywords. VOSviewer is a frequently used tool to create bibliometric networks of different elements such as authors, institutions, or countries using various network analysis methods such as co-citation, keyword, and bibliographic coupling (Van Eck & Waltman, 2010). The program provides a visualization option that allows for the detailed examination of bibliometric maps and has zoom, scroll, and search functions that facilitate the detailed examination of the map (Van Eck & Waltman, 2010). In

our study, keywords, citation analysis, types of articles, distribution of studies over the years, institutions and authors with the most publications were examined through bibliometric analysis.

3 Results

When examined in terms of publications, it was determined that out of the 164 studies related to AI in the field of nursing, 65.85% were research articles, 20.12% were reviews, and 8.54% were letters to the editor. Among the included 164 studies, they were published in 103 different journals, with the highest number of publications (nine studies) being in the Journal of Nursing Management (Figure 1).

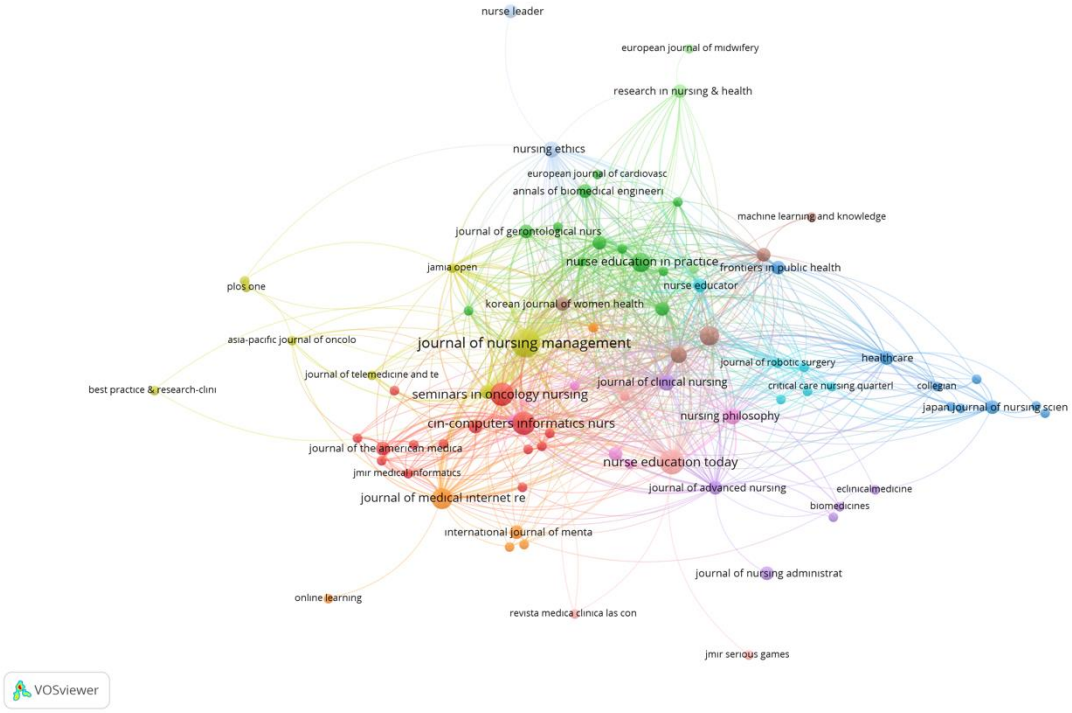

Figure 1: *Journals with the highest number of publications*

Studies related to AI in the field of nursing began in 2004, with the number of publications fluctuating between zero and one until 2017. Starting from 2017, there has been an increase in the number of publications, peaking in 2023 with the highest number of publications (Figure 2).

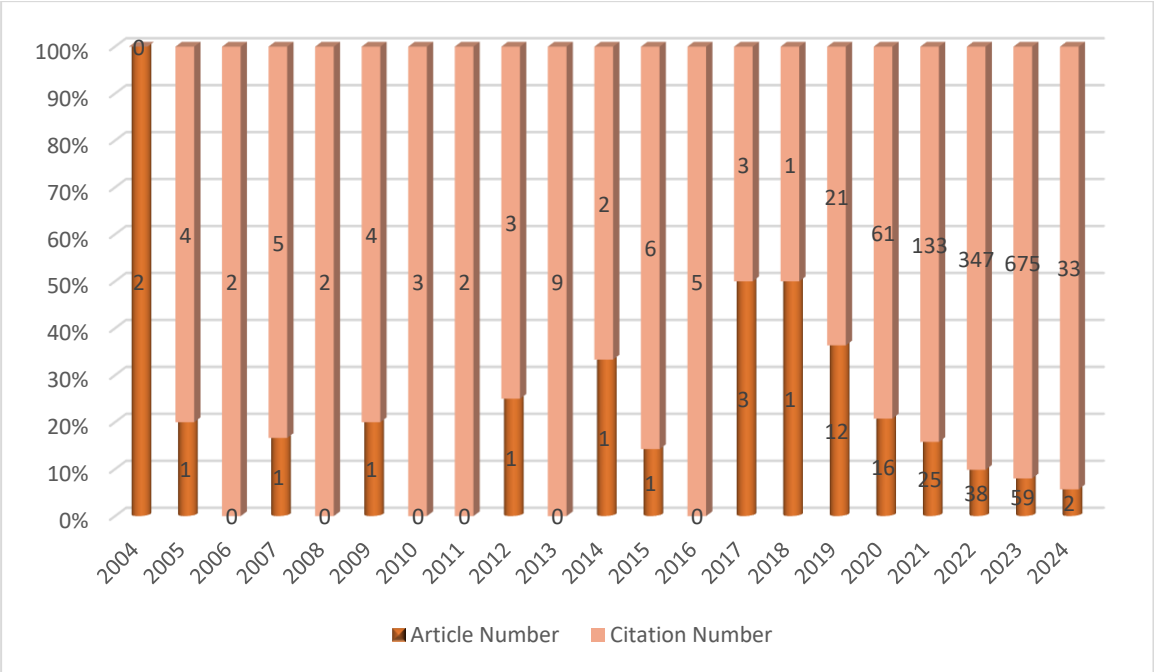

Figure 2: *Number of articles and citations over the years*

A total of 1010 citations have been made to studies related to AI in nursing, with an h-index of 20. Citations to the studies have increased proportionally with the number of publications each year. The top ten most cited studies are shown in Table 1.

Table 1: *Most Cited Articles*

Number	Name of the study	Citation Number
1	Open artificial intelligence platforms in nursing education: Tools for academic progress or abuse?	150
2	Nurse-Physician Communication Team Training in Virtual Reality Versus Live Simulations: Randomized Controlled Trial on Team Communication and Teamwork Attitudes	59
3	A Virtual Counseling Application Using Artificial Intelligence for Communication Skills Training in Nursing Education: Development Study	58
4	Can nurses remain relevant in a technologically advanced future?	53
5	Data mining as a tool for research and knowledge development in nursing	42
6	Artificial intelligence in nursing: Priorities and opportunities from an international invitational think-tank of the Nursing and Artificial Intelligence Leadership Collaborative	41
7	Development and Assessment of an Artificial Intelligence-Based Tool for Skin Condition Diagnosis by Primary Care Physicians and Nurse Practitioners in Teledermatology Practices	40
8	Artificial Intelligence -based technologies in nursing: A scoping literature review of the evidence	34
9	Promoting students' learning achievement and self-efficacy: A mobile chatbot approach for nursing training	34
10	The Co-Existence of Technology and Caring in the Theory of Technological Competency as Caring in Nursing	34

According to the analysis, a total of 164 studies related to AI in nursing were authored by 718 individuals. It was determined that the author with the highest number of publications (seven studies) is Rozzano Locsin (Figure 3).

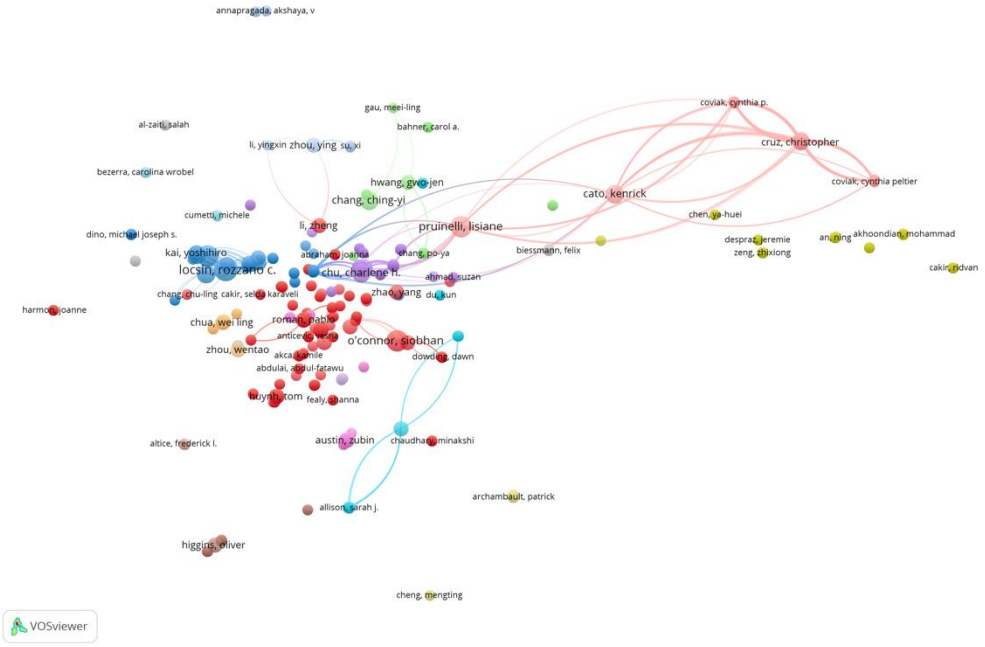

Figure 3: *Authors with the most publications*

When examined according to the institutions where the studies were conducted, it was found that a total of 387 institutions were involved in the research. The institution with the highest number of studies (seven studies each) was Florida Atlantic University and Tokushima University (Figure 4).

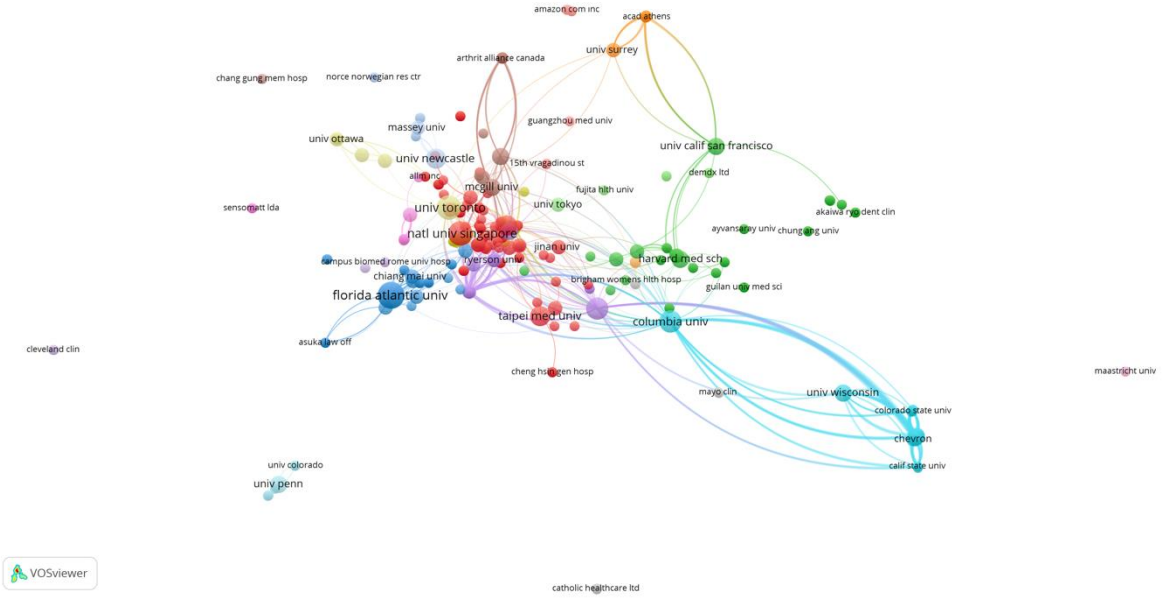

Figure 4: *Institutions with the most publications*

When examined according to countries, it was determined that 35.37% of the studies were conducted in the United States, 10.98% in China, 9.15% in Japan, 7.93% in Canada, and 36.57% in 47 different countries (Figure 5).

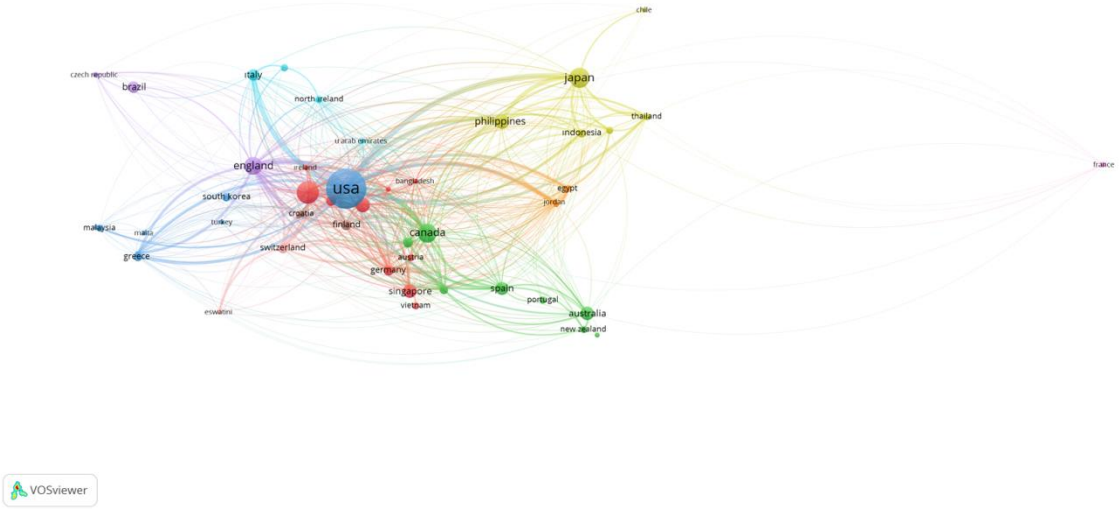

Figure 5: *Countries with the most publications*

In studies related to AI in nursing, a total of 481 keywords were used, and the most commonly used keywords were determined to be "artificial intelligence" (90), "nursing" (40), "machine learning" (24), "deep learning" (13), and "big data" (10) (Figure 6).

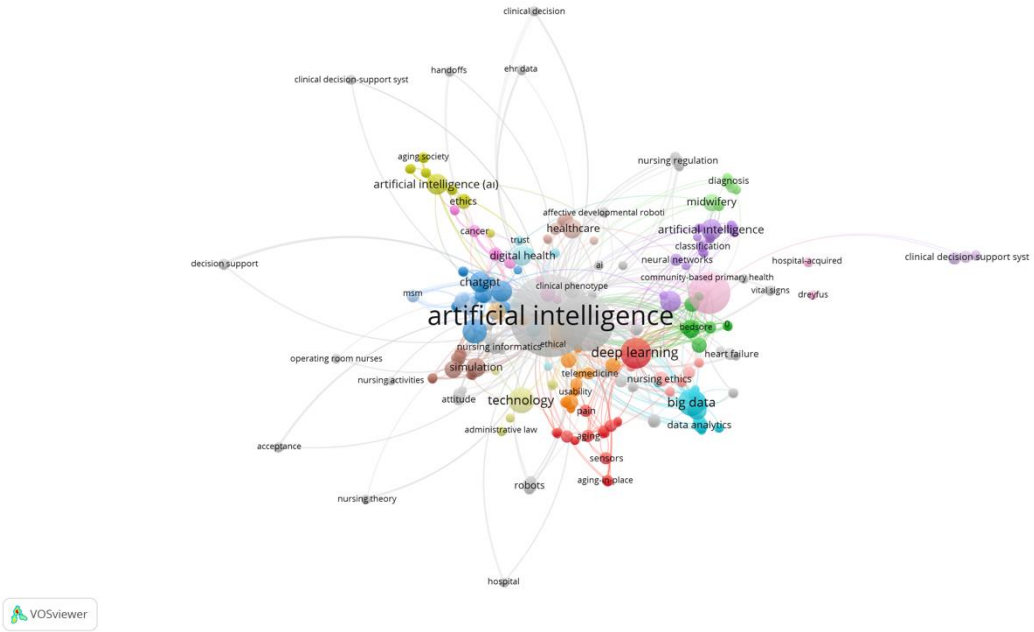

Figure 6: *Most used keywords*

4 Discussion

The bibliometric analysis conducted in this study aimed to examine studies related to AI in nursing using the Web of Science database. This study provided insights into citation trends, institutions, prolific authors, and journals publishing articles related to AI in nursing.

Our findings indicate a growing interest in studies related to AI in nursing over the past five years, with the highest number of publications observed in 2023, primarily in the form of research articles. This trend of increasing interest aligns with previous studies (Chang, Jen, & Su, 2022; Shi et al., 2023), which also noted a rise in the number of studies related to AI in nursing between 2017 and 2022. The rapid advancement of technology and its application in the healthcare sector have likely contributed to this increase, reflecting a shift in focus towards AI research in nursing.

When analyzing the journals, it was determined that the journal with the most publications is "Journal of Nursing Management," while the journal with the most citations is "Journal of Medical Internet Research.". (2022), In the study conducted by Shi et al. (2023), the "CIN-Computers Informatics Nursing" journal was identified as the journal publishing the most studies related to AI in nursing, while in the study conducted by Chang et al. (2022) the "Nurse Education Today" journal was determined to have the most publications. Although our study ranks "Journal of Nursing Management" first, "Nurse Education Today" ranks second, and "CIN-Computers Informatics Nursing" ranks third. It is thought that the changing interest in AI in nursing over time, as well as the increasing interest in studies related to AI in nursing, may have led to changes in the journals where these studies are published. Additionally, the publication trends of journals may change based on their target audience, which could also influence the shift towards publications focusing on AI in nursing within nursing journals.

Although there was variability in citation counts between 2004 and 2024, a consistent increase in citation counts has been observed from 2019 onwards, corresponding to the increase in the number of articles. Specifically, citation counts for the years 2019, 2020, 2021, 2022, and 2023 were 21, 61, 133, 347, and 675, respectively, indicating a steady rise. It was determined that the article with the highest number of citations was published in 2023, receiving 150 citations. As of the beginning of 2024, the articles had received 33 citations since the data were retrieved from Web of Science. Similar to previous studies, it has been observed that citation counts consistently increase, with the highest citation counts occurring in the years when the data were retrieved (Chang et al., 2022; Shi et al., 2023). Therefore, our study aligns with existing literature (Chang et al., 2022; Shi et al., 2023), indicating that the rapid growth of the literature on AI in nursing reflects the increased interest of authors in this field.

The H-index was developed by JE Hirsch in 2005 to evaluate scientific productivity and effectiveness. According to Hirsch, "If a researcher has h publications that have each been cited at least h times, and the remaining publications (N - h) have been cited no more than h times each, the researcher's H-index is h." (Erbağcı, 2009). In our study, the H-index of the included works was determined to be 20. This implies that at least 20 of the works have received a minimum of 20 citations each. It's noteworthy that in previous studies on AI in nursing, no findings regarding the H-index were encountered (Chang et al., 2022; Shi et al., 2023). The rapid increase in publications and citations related to AI in nursing over the past five years has also led to an increase in the H-index of the studies.

Access to technology is more easily facilitated in developed countries compared to developing and underdeveloped ones. In our study, when we looked at the distribution by countries, we found that 58 articles were produced in the United States, followed by China and Japan. The institutions with the highest number of publications, Florida Atlantic University and Tokushima University, are also located in these countries. In previous studies, while the United States ranked first in terms of the country with the highest number of publications, it was found that the rankings of other countries varied (Chang et al., 2022; Shi et al., 2023). It is believed that the ease of access to technology and the availability of financial support for research activities are facilitated by the fact that these top three countries with the highest number of publications were among the top five countries in the 2023 World Gross Domestic Product (GDP) Map.

It has been observed that 53 authors have contributed to the literature with more than two studies in the field of AI in nursing. In the past five years, with the emergence of a trend in studies related to AI in nursing, 665 authors have contributed to the literature with a single study. In total, the 164 articles included in our study were written by a total of 718 authors. Rozzano Locsin has been identified as the author with the highest number of articles (seven studies), and it is believed that the fact that the author works in the most productive country and institution facilitates the conduct of their studies, leading to a higher number of publications.

In bibliometric analyses, keywords are commonly considered fundamental elements representing concepts of information and are widely used to reveal the knowledge structure of research fields (Al, Şahiner, & Tonta, 2006). The frequent use of keywords indicates a strong trend in the topic under consideration (Kantek & Yesilbas, 2020). In our study, the most frequently used keyword was determined to be "artificial intelligence." While in previous years, the keyword "machine learning" was ranked first, in our study, it is ranked third (Chang et al., 2022; Shi et al., 2023). It is believed that the different results obtained from the literature may be due to variations in the years of the searches conducted and the continuous increase in studies related to AI in nursing.

5 Conclusions

The research covers studies related to AI in nursing from 2004 to 2024. The number of studies on AI in nursing has been increasing steadily in the past five years. The rise in studies indicates a growing interest in AI applications in the nursing field, particularly in developed countries. This study identified a total of 164 articles on AI in nursing, with more than half being research articles. It was found that 65.85% of these studies were research articles, with the majority being published in the Journal of Nursing Management (nine studies), and the highest number of studies being published in 2023. The most prolific author, with seven studies, was identified as Rozzano Locsin, while the United States was determined to be the country with the highest number of publications, and Florida Atlantic University and Tokushima University were the institutions with the most studies. The most frequently used keyword was "artificial intelligence," with a total citation count of 1010 and an h-index of 20. This suggests that AI applications in nursing are being implemented in clinical settings and continue to increase quantitatively. In future studies, readers can use the findings of this research to guide their own studies on AI in nursing. This study provides in-depth information about the current state of AI in nursing from 2004 to 2024 and offers readers/authors additional insights.

6 Declarations

6.1 Study Limitations

The research data is limited to articles scanned only in the Web of Science database. If another database is used, the results of the study may vary. Additionally, the citation numbers provided in this study indicate the numbers at the time of the search. In a different time frame, the numbers and rankings may differ.

6.2 Acknowledgements

There is no person or institution contributing to this research other than the authors.

6.3 Funding Source

No financial support was received for this research.

6.4 Competing Interests

There is no conflict of interest in this study.

6.5 Authors' Contributions

Corresponding Author Meltem ÖZKAYA: Conceptualization, Methodology, Software, Data curation, Writing- Original draft preparation, Visualization, Investigation, Writing- Reviewing and Editing, Software, Validation

2. Öznur KÖRÜKCÜ: Conceptualization, Methodology, Software, Data curation, Writing- Original draft preparation**,** Visualization, Investigation, Writing- Reviewing and Editing, Software, Validation

7 Human and Animal Related Study

7.1 Ethical Approval

Since the article was written as a bibliometric analysis, no ethical approval is required in our study within the framework of ethical rules and policies.

7.2 Informed Consent

Since this study was a bibliometric analysis, informed consent was not required.

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Research Article

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Kemoterapi Alan Hastalarda Aktiflik Düzeyi ve Yaşam Kalitesinin İncelenmesi

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ÖZ

Bu çalışma, kemoterapi tedavisi alan kanser hastalarının aktiflik ve yaşam kalitesi düzeyini belirlemek, aktiflik düzeyinin yaşam kalitesi üzerine etkisini saptamak amacıyla yapılmıştır. Tanımlayıcı ve kesitsel tipte yürütülen araştırmaya, bir üniversite hastanesinde 01 Nisan-31 Temmuz 2022 tarihleri arasında kemoterapi ünitesinde tedavi gören 201 hasta dahil edilmiştir. Veriler hasta tanımlama formu, Hasta Aktiflik Düzeyi Ölçeği ile Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Anketi kullanılarak elde edilmiştir. Hastaların %34,3'ünün düzey 1 ve %38,3'ünün düzey 4 seviyesinde aktifliğe sahip olduğu belirlenmiştir. Hastaların, yaşam kalitesinin genel sağlık boyutunun orta düzeyde olduğu; sosyal fonksiyon boyutunu en yüksek iken, emosyonel fonksiyon boyutunun en düşük boyut olduğu saptanmıştır. Hastaların aktiflik düzeyi arttıkça genel iyilik halinin, fiziksel ve uğraş fonksiyonunun da arttığı, bununla birlikte mali sorunların da azaldığı tespit edilmiştir. Hemşirelerin, hasta ve ailenin tedavi ve bakım sürecine dahil edilmesini sağlaması, hastanın kendi bakımında aktif rol almasını desteklemesi önerilmektedir.

Anahtar Kelimeler: Hasta aktiflik düzeyi, hemşire, kanser, kemoterapi, yaşam kalitesi.

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Examination of Activation Level and Quality of Life in Patients Receiving Chemotherapy

ABSTRACT

This study was conducted to determine the level of patient activation and quality of life of cancer patients who receive chemotherapy and the effect of activity level on quality of life. The descriptive and cross-sectional study was completed with 201 patients treated in the chemotherapy unit at a university hospital between 01 April-31 July, 2022. Data were maintained by using patient identification form, patient activation measure and European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire. It was determined that 34.3% of the patients had activity at level 1 and 38.3% at level 4. The general health dimension of the quality of life of the patients is moderate; It was determined that while the social function dimension was the highest, the emotional function dimension was the lowest. It was detected that as the activity level of the patients increases, the general state of well-being, physical and occupational function also increase, and the level of financial problems also decreased. It is recommended that nurses ensure that the patient and family are included in the treatment and care process, and that the patient takes an active role in their own care.

Keywords: Patient activation level, nurse, cancer, chemotherapy, quality of life.

1 Giriş

Kanser dünyada ve ülkemizde nedeni bilinen ölüm sıralamasında kardiyovasküler hastalıklardan sonra ikinci sırada yer almaktadır. Dünyada her cinsiyet ve yaş için 2020 yılında 19,3 milyon insan kanser tanısı almış olup yaklaşık 10 milyon birey kanser nedeniyle hayatını kaybetmiştir. Hastalık ve ölüm oranlarında giderek artış göstereceği tahmin edilen kanserin 2040 yılında 30,2 milyon bireyi etkileyeceği öngörülmektedir (Cancer tomorrow/IARC, 2020). Bu yönüyle kanser, bulaşıcı olmayan yaygın görülen hastalıklardan biri olarak kabul edilmektedir (The Globan Cancer Observatory, 2020).

Kemoterapi, kanser tedavisinin en etkili yöntemlerinden biridir. Bununla birlikte kemoterapiye bağlı olarak, bulantı-kusma, iştahsızlık, ağrı, ağız ülserleri, yorgunluk gibi fiziksel yan etkiler, anksiyete ve depresyon, uyku problemleri gibi psikolojik yan etkiler sık olarak ortaya çıkmaktadır. Gerek kansere bağlı gerekse kemoterapinin yan etkilerine bağlı ortaya çıkan semptomlar, hastaların yaşam kalitesini olumsuz etkileyebilmektedir (Altıparmak ve ark., 2011; Başer ve Öz, 2003; Dolu Kubilay ve Ergüney, 2020). Yaşamdan doyum almayı ifade eden yaşam kalitesi, bireyin fiziksel, psikolojik ve ekonomik açıdan yeterli olması, diğer bireyler ile iyi ilişkiler içinde olması, gelişim ve eğlence açısından kendine zaman ayırması olarak tanımlanmaktadır (Eskimez ve ark., 2020). Kanser hastalarında yaşam kalitesindeki bozulma, hastalık tanısı konulduktan sonra başlar ve tedavi süresince devam eder. Bu nedenle kanser hastalarına bakım vermenin amaçları, yalnızca sağkalımlarını artırmak değil, aynı zamanda uygun semptom yönetimini gerçekleştirmek ve yaşam kalitelerini iyileştirmektir (Üstündağ ve Zencirci, 2015).

Kanser hastalarının hastalığını yönetme konusunda kendi sorumluluklarını ve becerilerini geliştirmesi, dolayısıyla bakım ve tedavi sürecinde aktif rol alması son derece önemlidir. Hasta aktifliği kavramı, bireylerin, tedavi programlarını takip etmeleri, durumlarını izlemesi, gerektiğinde yaşam tarzı değişikliği yapmaları ve karar verici rolde olmaları olarak ifade edilmektedir (Koşar ve Beser, 2015). Aktif hastalar, kendi sağlık hizmetine katılma becerisine, motivasyonuna ve gücüne sahip olan bireylerdir. Bu hastalar, sağlık hizmeti veren kurumlarla iş birliği yaparak tıbbi karar verme süreçlerinde yer alabilir ve sağlıklarını kendi kendilerine yönetmek için aktif olarak izleme, planlama ve bilgi arama davranışında bulunabilmektedir (Bernat ve ark., 2016; Hibbard ve ark., 2017). Kanser tanılı bireylerle yapılan bir çalışmada, aktiflik düzeyi yüksek olan katılımcıların daha az sigara içme, yasal olmayan ilaç kullanma gibi sağlıklarına zararlı davranışlar gösterme eğilimlerinin düşük olduğu; bununla birlikte düzenli ve dengeli beslenme, stresle başa çıkma, kan basıncı ve kan şekeri ölçümü,

kilo takibi gibi öz yönetim davranışlarının yüksek olduğu saptanmıştır (Welter ve ark., 2021). Hastalar aktif olduklarında ve bakımlarına dahil olduklarında sadece sağlık sonuçlarını iyileştirmekle kalmaz, aynı zamanda sağlık hizmeti kalitesini ve maliyetlerini de olumlu yönde etkiler (Bernat ve ark., 2016). Bu nedenlerden dolayı hasta aktifliği kanser gibi kronik hastalıkların yönetiminde önemli bir yere sahiptir. Bireylerin tedavilerinde aktifliğini desteklemek ve yüksek aktiflik düzeyine sahip olmasını sağlamak, kanser tedavisini yönetmekte büyük önem taşımaktadır (Hibbard ve ark., 2004). Bununla birlikte aktif olarak hastalık yönetimini sağlayan hastaların yaşam kalitesinin de yüksek olacağı öngörülmektedir (Başer ve Öz, 2003; Menekli ve ark., 2020).

Literatürde, kemoterapi tedavisi alan hastaların aktiflik düzeyi ile yaşam kalitesine etkisinin araştırıldığı sınırlı sayıda çalışma bulunmaktadır (Kanu ve ark., 2021; Vohra ve ark., 2023). Bu çalışma, kemoterapi alan kanser hastalarının aktiflik ve yaşam kalitesi düzeyini belirlemek, aktiflik düzeyi ve yaşam kalitesi ilişkisini ortaya koymak amacıyla planlanmıştır. Bu çalışmanın kemoterapi tedavisi alan hastalara hizmet sunan sağlık profesyonellerine, hastaların yaşam kalitesinin iyileştirilmesi açısından aktifliğinin desteklenmesi konusunda fikir sunacağı ve literatüre katkı sağlayacağı düşünülmektedir.

2 Metodoloji

2.1 Araştırmanın tipi ve örneklemi

Bu çalışma, tanımlayıcı ve kesitsel tipte yapılmıştır. Araştırmanın evrenini, 01 Nisan – 31 Temmuz 2022 tarihleri arasında bir üniversite hastanesinin ayaktan kemoterapi ünitesinde tedavi gören hastalar oluşturmuştur. Araştırmanın örneklem sayısının belirlenmesi için güç analizi (power analysis) uygulanmıştır. Güç analizi G*Power 3.1 sürümü ile gerçekleştirilmiştir. Güç analizi sonucunda en az 176 katılımcının çalışmaya dahil edilmesi belirlenmiştir. Dahil edilme kriterleri; çalışmaya katılmaya gönüllü olma, 18 yaş ve üzerinde olma, görüşmeleri sürdürmeyi engelleyecek görsel, işitsel ve sözel engelin olmaması, okuma ve yazma bilmedir.

2.2 Veri Toplama Araçları

Araştırma verileri, hasta tanımlama formu, Hasta Aktiflik Düzeyi Ölçeği (HADÖ) ile Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Anketi (European Organization for Research and Treatment of Cancer Core QOL Questionnaire, EORTC QLQ-30 Ölçeği) kullanılarak elde edilmiştir.

Hasta tanımlama formu; hastalara ait sosyo-demografik (cinsiyet, yaş, medeni durum, eğitim durumu, meslek, yaşanılan yer gibi) verileri içeren yedi soru ve hastalığa ilişkin özellikleri (tanı, tanı süresi, metastaz durumu, kanser dışında ek hastalık varlığı gibi) içeren altı sorudan oluşmaktadır.

Hasta Aktiflik Düzeyi Ölçeği; ilk olarak Hibbard ve arkadaşları (2004) tarafından kronik hastalığı olan bireylerde hasta aktiflik düzeyini değerlendirmek amacıyla geliştirilmiştir. Daha sonra Hibbard ve arkadaşları (2005) tarafından ölçeğin kısa formu uyarlanmıştır. HADÖ 5'li likert tipinde tek boyutlu olup 13 maddeden oluşmaktadır. Ölçekten alınan puanlar 0-100 aralığında olup; elde edilen puana göre aktiflik düzeyi 0-46 puan: 1. düzey (en düşük aktiflik düzeyi); 47-55 puan: 2. düzey; 55-72 puan: 3. düzey ve 72,5 -100 puan: 4. düzey (en yüksek aktiflik) olarak değerlendirilmektedir. (2015) tarafından yapılan Türkçe geçerlik ve güvenirlik çalışmasında ölçeğin cronbach alfa katsayısı 0,81 olarak bulunmuştur. Bu çalışmada ölçeğin cronbach alfa katsayısı: 0,98'dir.

Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Anketi; kanser hastalarının yaşam kalitesinin değerlendirildiği sık kullanılan yaşam kalitesi ölçeklerinden biridir. Aaronson ve arkadaşları tarafından geliştirilen ölçek, 30 sorudan oluşmaktadır. Ölçekte genel sağlık durumu, işlevsel ve semptomlarına yönelik bilgiler elde edilebilmektedir. Ölçeğin işlevsel alt boyutu; fiziksel, rol, bilişsel, emosyonel, sosyal, global yaşam kalitesi olmak üzere altı bölümden oluşmaktadır.

Semptom alt boyutu; yorgunluk, bulantı ve kusma, ağrı, dispne, uyku bozukluğu, iştahsızlık, konstipasyon, diyare ve mali sorunları içermektedir. Ölçekteki ilk 28 madde 4'lü likert tipindedir. Bu bölümde elde edilen yüksek puan fonksiyonel düzeyin veya semptom derecesinin yüksek olduğunu göstermektedir. Ölçeğin 29. sorusunda, hastadan 1'den 7'ye kadar (1: Çok kötü ve 7: Mükemmel) sağlığını ve 30. soruda genel yaşam kalitesini değerlendirmesi istenmektedir. Bu bölümden alınan yüksek puanlar yaşam kalitesinin yüksek olduğunu, düşük puanlar ise yaşam kalitesinin düştüğünü ifade etmektedir. EORTC QLQ-C30, Cankurtaran ve arkadaşları (2008) tarafından Türkçe'ye uyarlanmış ve kanser tanılı Türk hastalarda geçerlik ve güvenirliği saptanmıştır. Bu çalışmada ölçeğin cronbach alfa katsayısı genel sağlık alt boyutu için 0,97, fonksiyonel alt boyut için 0,93 ve semptom alt boyutu için 0,93 olarak bulunmuştur.

Veriler, araştırmaya katılmaya gönüllü olan hastalar ile ayaktan kemoterapi ünitesinde ve bekleme salonunda yüz yüze görüşme yöntemi ile toplanmıştır. Veri formları hastalar tarafından doldurulmuştur. Verilerin toplanması yaklaşık olarak 30-35 dk sürmüştür.

2.3 Verilerin Değerlendirilmesi

Elde edilen verilerin analizi yapılarak Statistical Package for Social Sciences (SPSS) Windows 26 paket programında yapılmıştır. Elde edilen verilerin normal dağılım gösterdiği değerlendirilmiştir. Analizde sayı, yüzde, ortalama, standart sapma ile verilerin normal dağılım durumuna göre parametrik testlerden yararlanılmıştır. Bu doğrultuda verilerin analizi için bağımsız gruplar t-testi, tek yönlü varyans analizi (ANOVA) ve Pearson korelasyon katsayısı kullanılmıştır. Tek yönlü varyans analizinde gruplar arası farkın tespit edilmesi için post-hoc testlerden Tukey Testi kullanılmıştır. İstatistiksel anlamlılık $p<0,05$ olarak kabul edilmiştir.

3 Bulgular

Hastaların %50,2'si kadın, %52,2'si 65 yaş ve üzeri, %92,5'i evli, %34,3'ü lise mezunu, %40,8'i ev hanımı ve %70,1'i de ilçede yaşamaktadır. Hastaların %65,2'si sürekli ilaç kullanmaktadır. Hastaların %26,9'u akciğer kanseri olup, %39,8'sinin tanı süresi 1-3 yıldır. Hastaların %45,3'ünde metastaz bulunmaktadır. Katılımcıların %36,3'ünün kanser dışında başka kronik hastalığı olmayıp, %96,5'inin bakımında yardımcı olan bireyler mevcuttur.

Hastaların %34,3'ü düzey 1, %3,5'i düzey 2, %23,9'u düzey 3 ve %38,3'ü düzey 4 seviyesindedir. Hastaların HADÖ puan ortalaması 59,58±34,99'dur. Hastaların EORTC QLQ-C30 ölçeği alt boyutu olan genel sağlık ölçeği puan ortalaması 50,12±17,68, fonksiyonel sağlık ölçeği puan ortalaması 53,27±27,82 ve Semptom ölçeği puan ortalaması 53,69±29,65'tir (Tablo 1).

Tablo 1: *Hastaların Hasta Aktiflik Düzeyi Ölçeği ve Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Anketi'ne ilişkin Puan Ortalamaları*

Ölçekler	**Ortalama**	**SS**	**n**	**%**
HADÖ	59,588	34,998		
Aktiflik düzeyi				
Düzey 1			69	34,3
Düzey 2			7	3,5
Düzey 3			48	23,9
Düzey 4			77	38,3
EORTC QLQ-30 Ölçeği				
Genel Sağlık Ölçeği	50,124	17,687		
Fonksiyonel Ölçeği	53,278	27,820		
Fiziksel Fonksiyon	52,902	30,113		
Uğraş Fonksiyonu	53,482	30,714		
Emosyonel Fonksiyon	39,718	38,613		
Kognitif Fonksiyon	58,789	36,326		
Sosyal Fonksiyon	62,321	35,300		
Semptom Ölçeği	53,693	29,657		
Yorgunluk	62,189	32,168		
Bulantı ve kusma	49,005	40,539		
Ağrı	58,789	34,199		
Nefes darlığı	34,328	39,848		
Uykusuzluk	59,535	39,143		
İştah kaybı	49,917	41,516		
Konstipasyon	54,394	43,124		
Diyare	48,424	40,947		
Mali sorunlar	49,253	31,459		

HADÖ: Hasta Aktiflik Düzeyi Ölçeği
EORTC QLQ-30: Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Anketi

Hasta Aktiflik Düzeyi Ölçeği ile EORTC QLQ-30 Ölçeği arasındaki ilişki incelendiğinde, aktiflik düzeyi ile genel sağlık alt boyutu arasında pozitif yönde zayıf düzeyde ilişki olduğu belirlenmiştir (r=0,235, p=0,001). Benzer şekilde fonksiyon alt boyutunun fiziksel fonksiyonu (r=0,197, p=0,005) ve uğraş fonksiyonunu (r=0,143, p=0,042) ile hasta aktiflik düzeyi arasında pozitif yönde zayıf düzeyde ilişki olduğu belirlenmiştir. Bununla birlikte semptom alt boyutunun mali sorunları ile hasta aktiflik düzeyi arasında negatif yönde zayıf düzeyde ilişki olduğu belirlenmiştir (r=-0,19, p=0,007) (Tablo 2).

Tablo 2: *Hasta Aktiflik Düzeyi Ölçeği ve Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Anketi Arasındaki Korelasyon*

EORTC QLQ-30	Hasta Aktiflik Düzeyi Ölçeği	
	r	**p**
Genel Sağlık Ölçeği	0,235	**0,001***
Fonksiyonel Ölçek	0,011	0,877
Fiziksel Fonksiyon	0,197	**0,005***
Uğraş Fonksiyonu	0,143	**0,042***
Emosyonel Fonksiyon	0,115	0,103
Kognitif Fonksiyon	0,028	0,695
Sosyal Fonksiyon	0,041	0,562
Semptom Ölçeği	0,005	0,948
Yorgunluk	0,034	0,631
Bulantı ve kusma	-0,006	0,931
Ağrı	0,041	0,564
Nefes darlığı	-0,077	0,275
Uykusuzluk	0,062	0,382
İştah kaybı	0,004	0,959
Konstipasyon	0,045	0,529
Diyare	0,018	0,799
Mali sorunlar	-0,190	**0,007***

*p<0,05
EORTC QLQ-30: Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Anketi

4 Tartışma

Bu çalışma, kemoterapi alan hastaların aktiflik ve yaşam kalitesi düzeyini belirlemek, aktiflik düzeyi ve yaşam kalitesi arasındaki ilişkiyi ortaya koymak amacıyla yapılmış olup çalışmada hastaların aktiflik düzeyi ile yaşam kalitesinin ilişkili olduğu belirlenmiştir.

Hasta aktifliği, hastalığın yönetiminde önemli bir rol oynamakta olup hasta aktifliğinin yüksek olması hastanın sağlık çıktılarını iyileştirmekte, daha iyi klinik sonuçlara katkı sağlamakta ve sağlık harcamalarını azaltmaktadır (Greene ve Hibbard, 2011; Hibbard ve Greene, 2013). Çalışmada katılımcıların aktiflik düzeyleri incelendiğinde %38,3'ünün düzey 4, yani en yüksek aktiflik düzeyinde oldukları tespit edilmiştir. Bununla birlikte katılımcıların %34,3'ünün düzey 1 seviyesinde yani en düşük aktiflik düzeyinde oldukları tespit edilmiştir. Kanu ve arkadaşlarının (2021) meme kanseri hastalarında yapmış olduğu çalışmada, katılımcıların yüksek düzeyde hasta aktifliğine sahip olduğu bulunmuştur. Akça ve arkadaşlarının (2018) hipertansiyon hastalarında yapmış olduğu çalışmada, hastaların aktiflik düzeylerinin genel olarak yüksek olduğu, %35'inin stres altındayken bile rutini koruma bölümünde yer aldıkları, hastaların çoğunluğunun 4. düzeyde aktiflik düzeyine sahip olduğu tespit edilmiştir. Greene ve Hibbard'ın (2011) Minnesota'da birinci basamak sağlık hizmetlerine başvuran 18 yaş üstü 25.047 hasta ile yaptıkları çalışmada hastaların %46'sının 4. düzey ve %7'sinin 1. düzey hasta aktifliğine sahip olduğu bulunmuştur. Bu çalışmada, hastaların yarıya yakınının aktiflik düzeyinin yüksek olduğu bulunmuştur. Mevcut çalışmada, yaklaşık %40'nın aktiflik düzeyinin yüksek olması çalışmaya katılan hastaların çoğunluğunun tanı süresinin bir yıldan az süreli kanser tanısı alması ve metastazı olmaması ile ilişkili olabilir. Bununla birlikte elde edilen çalışma bulgusu, hasta aktifliği konusunda hastaların desteklenmesi gerekliliğini ortaya koymaktadır.

Çalışmada hastaların EORTC QLQ-30 ölçeğinde genel sağlığının orta düzeyde olduğu tespit edilmiştir. Hastaların fonksiyonel alt ölçek bölümünden en yüksek puanı sosyal fonksiyonundan, en düşük puanı da emosyonel fonksiyondan aldıkları saptanmıştır. Hastaların semptom alt ölçeği bölümünde ise en yoğun görülen üç semptom yorgunluk, ağrı ve uykusuzluk olarak belirlenmiştir. Özgün ve arkadaşlarının (2020) kanser ve yaşam kalitesi üzerine yapmış olduğu çalışmada, hastaların genel sağlık düzeyi puan ortalaması orta düzeyde saptanmış olup çalışmamızla benzerlik gösterdiği belirlenmiştir Aynı çalışmada hastaların fonksiyonel ölçek bölümünden en yüksek puanı emosyonel fonksiyondan, en düşük puanı da uğraş fonksiyonundan aldıkları, en yoğun görülen üç semptomun ise yorgunluk, iştahsızlık, uykusuzluk olduğu tespit edilmiştir (Özgün ve ark., 2020). Çalışkan ve arkadaşlarının (2016) kanser hastalarında yaşam kalitesini değerlendirdiği çalışmada da, hastaların fonksiyonel sağlık durumları iyi düzeyde belirlenmiştir. Aynı çalışmada hastalar fonksiyonel ölçeklerden en yüksek puanı emosyonel fonksiyondan alırken en düşük puanı da uğraş fonksiyonundan almış olup, en yoğun görülen üç semptom yorgunluk, iştahsızlık, uykusuzluk olarak saptanmıştır. Kutlutürkan (2019), 65 yaş üstü kanser hastaları ile yaptıkları çalışmada, yaşlı hastaların genel sağlık düzeyi puan ortalaması düşük bulunurken fonksiyonel alt ölçek bölümünden en yüksek puanı bilişsel fonksiyon ve emosyonel fonksiyondan aldığı tespit edilmiştir. Ekinci ve Düger'in (2018) çalışmasında, hastaların belirli semptomlarla hastane yatışlarının olduğunu ve yaşam kalitesinin bu semptomların yönetilememesi nedeniyle azaldığı saptanmıştır. Çalışmamızda hastalarda en yoğun görülen yorgunluk, ağrı ve uykusuzluk semptomlarının daha fazla görülmesi, kemoterapinin yan etkisi olarak düşünülmektedir. Bununla birlikte çalışmada, hastaların sosyal fonksiyon alanının yüksek olması, sosyal destek açısından olumlu olarak değerlendirilmektedir. Ancak çalışmada, emosyonel olarak hastaların desteklenmeye ihtiyaç duyduğu görülmektedir. Kanser tanısının oluşturduğu endişe ile tedavi sürecinin uzun süreli olmasının, hastalarda emosyonel alanda düşüklüğe yol açtığı düşünülmektedir.

Hasta aktifliği yüksek olan hastaların kendi tedavilerinde rol alma, süreçleri izleme, önerilen bakımı sağlama ve daha iyi sağlık çıktılarına sahip olmaları beklenir (Hibbard ve Greene, 2013). Bu durum hastaların yaşam kalitesini olumlu etkileyebilir. Çalışmada hastaların aktiflik düzeyi arttıkça genel iyilik halinin, fiziksel ve uğraş fonksiyonunun arttığı, bireyin yaşam kalitesini etkileyen spesifik semptomlardan mali sorunlarının azaldığı elde edilmiştir. Pankreas kanseri olan hastalarla yapılan bir çalışmada, aktiflik düzeyi 4 olan hastaların, daha düşük aktiflik düzeyine sahip hastalara göre (düzey 1 veya 2), yaşam kalitesinin daha iyi olduğu belirlenmiştir (Vohra ve ark., 2023). Bu çalışmaya ek olarak, Hibbard ve arkadaşlarının (2017), 500 kanser hastası ile yaptıkları çalışmada, aktiflik düzeyi yüksek olan hastaların tedavi planına 9 kat daha fazla uyum sağladıkları, tedaviden kaynaklı yan etkilerle başa çıkma olasılığı 4.5 kat olduğu, tanı konduktan sonra daha sağlıklı bir diyet başlamanın ise neredeyse 3.3 kat daha fazla olduğu tespit edilmiştir. Aynı çalışmada, aktiflik düzeyi düşük olan hastalarda bu oranların da düşük olduğu belirlenmiştir (Hibbard ve ark., 2017). Kanser hastalarının sağlık bakım hizmetlerinden yararlanma ve öz bakımlarını yönetme konusunda aktif olması sağlanırsa hastaların semptom yükü azaltılabilir ve yaşam kalitesinin artırılması sağlanabilir (Ekstedt ve ark., 2019). Çalışmada, hastaların aktiflik düzeyi arttıkça mali sorunlar yaşama durumunun da azalması, aktiflik düzeyinin desteklenmesi gerekliliğini ortaya koymaktadır. Elde edilen bulgu, aktiflik düzeyi ile birlikte öz yönetimin sağlanması ve sağlık durumunun desteklenmesi sonucu sağlık harcamalarının azalması ile ilişkili olabilir.

Bilindiği gibi kanser hastalığı pek çok semptom yükünü içinde barındıran, iyileşme süreci uzun olan, bakım ve tedavisi sadece hastane sınırlarında değil de hastanın taburculuğunda da uygun bakımının yapılması gerektiği zor bir hastalıktır (Ekinci ve Düger, 2018). Kemoterapinin yan etkilerine bağlı bulantı kusma, yorgunluk, ağrı gibi ortaya çıkan semptomların hemşirelik yönetiminde önemli bir yeri vardır (Gelin ve Ulus, 2015). Hemşireler, hastaların semptomlarını takip ederek, tedavi süreçlerinde

hasta ve ailesine destek olarak hastaların aktiflik düzeyinin ve yaşam kalitesinin yükseltilmesine katkı sağlayabilir. Bu çalışma bulgusunda da görüldüğü gibi, kanser hastalarının kendi hastalıklarını yönetme konusunda aktif olmaları, tedavi ve rejimleri hakkında yeteri kadar bilgi sahibi olmaları ve bilgiye erişim konusunda istekli olmaları, yaşam kalitesinin birçok alanını olumlu destekleyecektir. Bununla birlikte çalışmada, sağlıklarını yönetme konusunda aktif olan hastaların ekonomik sıkıntı yaşayabileceği ortaya konulmuştur.

5 Sonuç

Çalışmada elde edilen bulgular doğrultusunda, hastaların üçte birinin düşük düzeyde aktif olduğu, yaşam kalitesinin genel sağlık boyutunun orta düzeyde olduğu; sosyal fonksiyon boyutu en yüksek iken, emosyonel fonksiyon boyutunun en düşük olduğu belirlenmiştir. Ayrıca hastaların aktiflik düzeyi arttıkça genel iyilik halinin, fiziksel ve uğraş fonksiyonunun da arttığı, bununla birlikte mali zorluk düzeylerinin de azaldığı saptanmıştır. Bu bulgular doğrultusunda, kanser tanısı aldıkları günden itibaren hastaların bütüncül olarak değerlendirilmesi, hasta ve ailenin tedavi ve bakım süresine dahil edilmesi, hastanın kendi bakımında aktif rol almasının desteklenmesi önemlidir. Ek olarak, hastalara ve ailelerine hastalığı yönetme konusunda eğitim ve danışmanlık hizmetinin sağlanması, her kemoterapi tedavisi sürecinde hastaların hastalığı yönetme becerilerinin değerlendirilmesi ve kendi bakımını üstlenmesi konusunda teşvik edilmesi gerektiği düşünülmektedir. Özellikle hastalığını yönetme konusunda aktif olan hastalar başta olmak üzere tüm kanser hastalarının mali sorunlar yönünden değerlendirilmesi ve gerekli destek kaynakları açısından hastaların yönlendirilmesi sağlanabilir. Bununla birlikte hasta aktifliğini ve yaşam kalitesinin alt boyutlarını olumsuz etkileyen nedenlerin araştırılması, daha büyük örnekleme sahip, çok merkezli araştırmaların yapılması ve verilerin birleştirilerek ulusal veri tabanı oluşturulması önerilmektedir.

6 Beyanname

6.1 Çalışmanın Sınırları

Araştırmanın birkaç sınırlılığı bulunmaktadır. Araştırma, belirli zaman diliminde tek bir merkezde kemoterapi tedavisi gören hastalarla yapıldığından dolayı genelleme yapılamaz. Ayrıca, hastaların aktiflik düzeyi ve yaşam kalitesi ile ilgili bilgiler, ölçekler aracılığıyla öz bildirimlerine dayalı olarak elde edilmiştir.

6.2 Finansman Kaynağı

Çalışmanın giderleri, araştırmacılar tarafından karşılanmıştır.

6.3 Çıkar Çatışması

Bu yayında herhangi bir çıkar çatışması yoktur.

6.4 Yazarların Katkıları

Yazar Dilek BENZER: Makale için fikir ya da hipotezin oluşturulması, gereç ve yöntemlerin planlanması, verilerin düzenlenmesi ve analizi, literatür taraması, metin yazımı

Sorumlu Yazar Feride TAŞKIN YILMAZ: Makale için fikir ya da hipotezin oluşturulması, gereç ve yöntemlerin planlanması, metin düzenlenmesi, eleştirel okuma.

7 İnsan ve Hayvanlarla İlgili Çalışma

7.1 Etik Onay

Araştırma öncesi bir üniversitenin etik kurulundan (karar no: 2022/02) ve çalışmanın yapıldığı kurumdan yazılı izin alınmıştır. Araştırmada Helsinki Deklarasyonu Prensipleri'ne uygun davranılmıştır.

7.2 Bilgilendirilmiş Onam

Araştırmaya katılan hastalara, alınan bilgilerin gizli kalacağı konusunda bilgilendirme yapılmıştır. Araştırmaya katılmayı kabul eden hastalardan bilgilendirilmiş onam formu ile yazılı izin alınmıştır. Ayrıca, araştırmada veri toplama amacıyla kullanılan ölçekler için de sorumlu yazarlardan izin alınmıştır.

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The Turkish Version of The Laval Quality of Life Questionnaire Reliability and Validity in Obesity

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ABSTRACT

Obesity is a disease that affects quality of life. This study was planned to evaluate the Turkish validity and reliability of the LAVAL quality of life questionnaire. The study was conducted in Izmir Bayraklı District Health Directorate Healthy Life Center No. 1 (October 1, 2021-November 15, 2021) and Gaziemir Municipality (November 15, 2021-March 15, 2022). Dokuz Eylul University Ethics Committee accepted the study on 22.12.2021, with the decision number 2021/38-08. People with a body mass index ≥ 30 kg/m2 and who met the inclusion/exclusion criteria were included in the study. In addition to the Laval Questionnaire, the SF-12 general health quality of life questionnaire and the Obese Specific Quality of Life Scale were used. For the adaptation of the Turkish version of the questionnaire, language validity was first ensured by the back translation method. The mean age of the 235 volunteer participants was 49.11 ± 13.1 years. The Kaiser-Meyer-Olkin coefficient for exploratory factor analysis was calculated as 0.92. RMSEA was 0.61 (RMESA<0.80). Cronbach's alpha value, which is an indicator of the internal consistency coefficient of the Laval Questionnaire in obese individuals, was calculated as 0.95. Obesity Specific Quality of Life and SF-12 Quality of Life Scale scores were found to have a statistically significant effect on the Laval Questionnaire score ($p<0.05$). The Laval Questionnaire is a valid and reliable questionnaire to measure the quality of life of individuals with obesity in the Turkish population.

Keywords: quality of life, obesity, validity, and reliability

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Obezitede 'The Laval Quality of Life' Anketi Türkçe Versiyonu Güvenilirlik ve Geçerlilik

ÖZ

Obezite yaşam kalitesini etkileyen bir hastalıktır. Bu çalışma LAVAL yaşam kalitesi anketinin Türkçe geçerlilik ve güvenilirliğini değerlendirmek amacıyla planlandı. Araştırma İzmir Bayraklı İlçe Sağlık Müdürlüğü 1 No'lu Sağlıklı Hayat Merkezi (1 Ekim 2021-15 Kasım 2021) ve Gaziemir Belediyesi'nde (15 Kasım 2021-15 Mart 2022) yürütülmüştür. Dokuz Eylül Üniversitesi Etik Kurulu 22.12.2021 tarihinde 2021/38-08 karar numarası ile çalışmayı kabul etmiştir. Vücut kitle indeksi ≥ 30 kg/m2 olan ve çalışmaya dahil edilme/dışlanma kriterlerini karşılayan kişiler çalışmaya dahil edilmiştir. Laval Anketi'ne ek olarak SF-12 genel sağlık yaşam kalitesi anketi ve Obezlere Özgü Yaşam Kalitesi Ölçeği kullanılmıştır. Anketin Türkçe versiyonunun uyarlanması için öncelikle geri çeviri yöntemiyle dil geçerliliği sağlanmıştır. Gönüllü 235 katılımcının yaş ortalaması 49,11 ± 13,1'dir. Açıklayıcı faktör analizi için Kaiser-Meyer-Olkin katsayısı 0.92 olarak hesaplanmıştır. RMSEA 0,61'dir (RMESA<0,80). Obez bireylerde Laval Anketi'nin iç tutarlılık katsayısının bir göstergesi olan Cronbach alfa değeri 0,95 olarak hesaplanmıştır. Obeze Özgü Yaşam Kalitesi ve SF-12 Yaşam Kalitesi Ölçeği puanlarının Laval Anketi puanı üzerinde istatistiksel olarak anlamlı bir etkiye sahip olduğu bulunmuştur (p<0,05). Laval Anketi, Türk toplumunda obezite sorunu yaşayan bireylerin yaşam kalitesini ölçmek için geçerli ve güvenilir bir ankettir.

Anahtar Kelimeler: yaşam kalitesi, obezite, geçerlilik ve güvenilirlik

1 Introduction

Obesity is a chronic, recurrent, and progressive public health problem (Brown et al. 2021). As a common noncommunicable disease, it seriously threatens human life and public health and impairs quality of life (Aldubikhi 2023; Wharton et al. 2020). Today, health professionals agree that medical parameters will be insufficient for evaluating individuals as healthy. For this purpose, quality of life scales are increasingly used to measure and evaluate the results of medical interventions(Shah, Keerthi, and Gali 2023). Obesity can cause physical, mental, and economic problems. Treatment strategies include diet, physical activity, behavioural therapy, pharmacotherapy, and surgery (Alqunai et al. 2022; Donini et al. 2017; Therrien et al. 2011). It is important to evaluate quality of life in terms of a holistic approach. In Turkey, studies on scales that evaluate culturally adapted obesity-specific improved quality of life are rare. Therefore, the aim of this study was to evaluate the validity and reliability of the Laval Questionnaire developed for obese individuals.

2 Methodology

In this study, in which we investigated the validity and reliability of the Laval questionnaire, which measures quality of life in obese individuals in the Turkish language, 235 participants were included. This study was conducted in primary health care units and in the health unit of the district municipality. The translation method was "back translation". After the three-step translation, a questionnaire was administered to the participants. The Turkish version of the Laval Questionnaire, Short Form-12 and Obese Specific Quality of Life Scale questionnaires were administered.

The Ethics Committee approval of the Dokuz Eylul University Research Ethics Committee was discussed, and the study was accepted with the date 10/06/2021 and the decision number 2021/27-21. Research was conducted at the Bayraklı District Health Directorate No. 1 Healthy Life Centre (1 October 2021-15 November 2021) and Gaziemir Municipality (15 November 2021-15 March 2022).

Participants: Inclusion criteria: Patients who volunteered, were literate, aged ≥ 18 years, and aged ≤ 75 years, had a body mass index (BMI) ≥ 30 kg/m^2, or were able to follow instructions to complete the questionnaires. Individuals affected by psychiatric illness were considered to constitute an exclusion criterion.

Translation Method: The language validity of the Laval Questionnaire was assessed using the "back translation" method. A linguist who is proficient in both culture and language translated into Turkish (V1). Later, a second linguistics expert translated the questionnaire back into French. A third linguistics expert checked all translations and compared them with the original version (V2). To identify incomprehensible questions and to obtain information about the comprehensibility of the questionnaire, 11 questions about the Turkish version were administered to ten people with obesity. The third linguistics expert re-examined the translation, and the final Turkish version was used.

Assessment: Patient demographic information was recorded. The Turkish version of the Laval Questionnaire, SF-12, and Obese-Specific Quality of Life Scale were used to assess quality of life. All the questionnaires were read and answered individually by the participants. The Laval Questionnaire was developed in French by Therrien F. et al.(Therrien et al. 2011). Each item was calculated on a 7-point Likert scale. The total score is obtained by summing the sub parameter scores. The Laval Questionnaire has no cut-off value, and a high score corresponds to good quality of life(Therrien et al. 2011).

Patrick et al. developed the Obese-Specific Quality of Life Scale (Patrick, Bushnell, and Rothman 2004). It is a 6-point Likert-type scale consisting of 17 items. This scale is one-dimensional and has no subdimensions. The raw scores determined were converted into standardized scores between 0 and 100 using the formula. A high score is indicative of good quality of life (Patrick et al. 2004).

Soylu et al. performed a reliability and validity study of the Turkish version of the SF-12 Quality of Life Scale that assesses activity and role limitations resulting from physical or emotional problems (Soylu and Kütük 2022).

Study size: The sample size was determined based on a 5:1 ratio, where the sample size is expected to be at least five times the total number of items in the questionnaire (Kwon and Kim 2021).

Statistical analysis: Explanatory factor analysis and confirmatory factor analysis (CFA) were performed. Reliability analyses and test-retest analyses of the questionnaire were also performed. All analyses were performed with IBM SPSS 26. The AMOS 24 package was used for confirmatory factor analysis. The final version of the model, the goodness-of-fit index (GFI), was interpreted. The significance level (α) was set to 0.05 for all the analyses. The Shapiro–Wilk test was used to check whether the Laval Questionnaire scores were normally distributed between the groups. The descriptive values of the continuous variables in the study are presented as the mean, median and standard deviation. The descriptive values of the discrete variables are presented as numbers and percentages. Since the variables were not normally distributed ($p<0.05$), analyses were performed with nonparametric test methods. The Spearman correlation coefficient was calculated in the analysis of the relationships between the scales.

3 Results

Our study included 172 women and 48 men, for a total of 235 volunteer participants, who received routine counselling due to obesity at the Bayraklı District Health Directorate Healthy Life Center and Gaziemir Municipality (Table 1).

Table 1: *Demographic and clinical information of participants*

	Mean ± SD
Age (years)	49,11 ± 13,1
Sex (f/m)	172/48 (78,2%/21,8%)
Body weight (kg)	91,96 ± 15,26
Height (cm)	162,58 ± 8,75
BMI (kg/m2)	34,76 ± 5,05
Waist circumference (cm)	107,1 ± 11,51
SD: standard deviation, BMI: body mass index, f:female, m:male, kg:kilogram, cm: centimeter, m:meter	

Validity and Reliability of the Laval Questionnaire: In the application, first, the Kaiser–Meyer–Olkin (KMO) test was used to check the suitability of the sample number for analysis, and then Bartlett's test of sphericity was applied to test the statistical significance of the model. The percentage of variance explained for the dimension was determined to be 6.22. The percentage of the total variance explained by the Laval Questionnaire model, which was adapted into Turkish and consists of 44 items and 6 dimensions, was calculated as 57% (Table 2).

Table 2: *Item factor values and descriptive statistical values of items*

Question Number	**Activity/Mobility (Mean±SD)**	**Symptoms (Mean±SD)**	**Hygiene (Mean±SD)**	**Emotions (Mean±SD)**	**Social Interaction (Mean±SD)**	**Sexual Life (Mean±SD)**	**Factor Items (Mean± SD)**
6	4,12±1,57						0,41
7	4,02±1,59						0,51
26	3,89±1,98						0,69
27	3,55±1,92						0,78
28	4,75±1,97						0,74
29	4,5±1,93						0,70
30	4,23±1,92						0,76
31	5±1,78						0,51
32	3,67±2,16						0,54
1		4,77±1,71					0,53
2		3,5±1,39					0,55
3		3,16±1,85					0,44
4		4,27±1,87					0,61
20		3,61±1,89					0,54
21		4,59±1,69					0,62
22		3,33±1,85					0,68
23		5,86±1,53					0,61
24		4,67±2,01					0,60
25		4,38±2,09					0,47
14			3,86±1,91				0,66
41			5,9±1,67				0,65
42			5,93±1,65				0,60
43			4,6±2,26				0,63
44			4,35±1,93				0,57
5				3,58±1,52			0,56
13				5,16±1,94			0,56
15				3,81±1,51			0,45
16				4,4±1,60			0,38
17				4,28±1,60			0,64
18				4,77±1,81			0,49
19				4,14±1,34			0,42
35				4,37±1,57			0,69
36				4,22±1,49			0,75
38				5,06±1,71			0,45
39				4,23±2,02			0,69
8					4,82±2,16		0,47
9					5,57±1,61		0,69
10					5,67±1,58		0,71
11					5,2±1,75		0,73
33					5,38±1,89		0,52
34					5,32±1,74		0,53
40					5,41±1,80		0,44
12						4,45±1,93	0,60
37						5,11±1,65	0,45
Variance explanation percentage	**17,83**	**9,09**	**7,89**	**8,35**	**7,40**	**6,42**	**57,00**

Laval Questionnaire Confirmatory Factor Analysis (CFA): CFA was applied to control the scale model established with AFA. The χ2 value was 1993.48. The degree of freedom of the second model was 873. The χ2/SD ratio, which was calculated to test the significance of the model, also decreased to 2.28. A χ2/SD value less than 3 is the most basic GFI that reflects the statistical significance of the model. The RMSEA of the newly established model decreased to 0.06. A GFI of 0.90, an NFI of 0.90, an IFI of 0.94 and a CFI of 0.94 were calculated.

Reliability analysis: The Cronbach's alpha (α) coefficients for mobility, symptoms, personal hygiene, emotions, social interactions, and sexual life subdimensions were calculated as 0.89, 0.80, 0.81, 0.87, 0.80 and 0.70, respectively. The correlation coefficient values between the items on the Laval Questionnaire ranged from 0.28 to 0.70. Due to the low item correlation total coefficient values, item extraction was not performed, and the 44-item scale was continued.

Test-retest Reliability: The test-retest analysis process was performed in two stages. A significance test of the difference between the two tests and whether the averages changed according to time was applied to 20 participants with an interval of 15 days.

Correlation analysis between variables: In our study, the correlations between the Laval Questionnaire total score and subdimensions and between the Obese-Specific Quality of Life Scale and SF-12 Quality of Life Scale scores were tested using Pearson correlation analysis (Table 3).

Table 3: *Evaluation of the Relationship Between the Laval Questionnaire and Other Quality of Life Scales*

The Laval Questionnaire		***Activity mobility***	***Symptoms***	***Hygiene***	***Emotions***	***Social interactions***	***Sexual life***	***Total laval score***
Obese-specific QoL	***r***	*-0,58*	*-0,61*	*-0,62*	*-0,66*	*-0,57*	*-0,55*	*-0,70*
	p	*<0,001**	*<0,001**	*<0,001**	*<0,001**	*<0,001**	*<0,001**	*<0,001**
SF-12 QoL	***r***	*0,52*	*0,48*	*0,51*	*0,47*	*0,39*	*0,33*	*0,54*
	p	*<0,001**	*<0,001**	*<0,001**	*<0,001**	*<0,001**	*<0,001**	*<0,001**
*r: Pearson correlation analysis; QoL: quality of life, *p<0,05*								

4 Discussion

Disease-specific quality of life studies have started to attract increased amounts of attention in recent years(Haraldstad et al. 2019). The aim of this study was to evaluate the validity and reliability of the Laval Questionnaire, which was translated from French to Turkish, and to determine whether it is a valid and reliable scale for Turkish obese individuals.

It was reported that during the initial development of the Laval Questionnaire, the questionnaire was a useful tool for research and clinical use (Therrien et al. 2011). The questionnaire was also translated into Italian (Donini et al. 2017). As in these two studies, the average age of the participants was in line with that of our study. The participants had a BMI of 52.6 kg/m^2 (Therrien et al. 2011). In an Italian study, participants' BMIs were approximately 40.4 kg/m^2 and above (Donini et al. 2017). The average BMI of the participants in our study was 34.76 kg/m^2. Since the sample in our study consisted of individuals

who applied to primary health care services, this value was found to be lower than that reported in other studies. In this case, we showed that the questionnaire can be applied to all obese individuals regardless of the severity of obesity.

The Cronbach's alpha coefficient, in our study, indicated that the scale had excellent reliability (Kang and Ahn 2021). The Laval questionnaire has six sub parameters. Problems that may be caused by obesity are considered in the symptom parameter. Participants received half of the maximum score. According to the European Obesity Study Society 2022 report, as BMI increases, individual physical activity levels decrease (WHO 2023 report). Obesity progresses in individuals whose physical activity level decreases and whose risk of developing other chronic diseases, especially coronary heart disease, diabetes mellitus and cancer, increases (Elagizi et al. 2020). In addition, obesity affects musculoskeletal health and reduces mobility(Jakicic and Davis 2011). The average score of our study participants was 43. Personal hygiene and clothing sub parameters are used to measure the effect of obesity. Backholer et al. reported that people with level 1 or 2 obesity have limitations in their daily living activities (Backholer et al. 2012). It has been emphasized that this picture is getting worse, especially in the elderly population, and they may need care due to disability (Haraldstad et al. 2019). We calculated the symptom score of the people in the study to be 27 on average. Emotions and social interaction sub parameters provide information about the psychological effects of obesity on individuals. Obesity is a disease associated with many psychiatric diseases (Ralph et al. 2022). It has been reported that obese individuals are more likely to be diagnosed with anxiety and depression than are normal weight individuals (Amiri and Behnezhad 2019; Braiji, Abduljawad, and Alrasheedi 2022). In our study, we calculated the participants' score as 51. While the social interaction score reached a maximum of 49 points, we calculated the score of the participants in this study as 40. The relationship between sexual activity and obesity can be discussed in many ways. In a review by Sarwer et al. it was reported that sexual activity is affected by changes in hormonal structure (Sarwer, Lavery, and Spitzer 2012). Weight gain in women is associated with many diseases, such as infertility, amenorrhea, irregular menstrual periods, and polycystic ovary syndrome. In men, it has been emphasized that weight gain can cause sexual dysfunction by causing irregularities in testosterone and other hormones (Sarwer et al. 2012). We calculated the population score for this study as 9. The global score of the entire survey is a maximum of 308. In our study, we calculated the total score as 210. We think that the scores of these parameters will be advantageous in terms of their use in the clinic, especially during patient follow-up. We predict that, whichever parameter is associated with a decrease or increase in the score, the management programme for obesity will be shaped accordingly.

In this study, statistically significant correlations were found between the Obese-Specific Quality of Life and SF-12 Quality of Life scores, which were selected as parallel questionnaires, and between the subdimensions and total score of the Laval Questionnaire. According to the results of the multivariate linear regression model, a one-point increase in the obesity-specific quality of life score resulted in a 1.18-point decrease in the Laval Questionnaire total score. An increase in the score obtained from the SF-12 Quality of Life Scale by 1 point resulted in an increase of 4.14 points in the Laval Questionnaire score. Accordingly, 58% of the Laval Questionnaire scores can be explained by the Obese-Specific Quality of Life and SF-12 quality of life questionnaire scores.

The epidemiology and pathophysiology of obesity have changed, and accordingly, quality of life is affected in many ways (Lin and Li 2021; The Lancet Gastroenterology & Hepatology 2021). Grave et al. reported that the quality of life of obese individuals is affected by the level of physical activity (Kolotkin, Meter, and Williams 2001). Other parameters, such as eating behaviour and the presence of chronic diseases, also affect quality of life in different dimensions (Donini et al. 2020; Osborne,

Costello, and Kellow 2008). It has been observed that eating behaviours are affected during the COVID-19 pandemic (Aldubikhi 2023; Costa et al. 2021). The Laval Quality of Life Questionnaire can inform clinicians about individuals by measuring different parameters. In clinical trials evaluating specific therapeutic interventions for specific diseases, the use of disease-specific tools is recommended for assessing overall quality of life (Wee et al. 2008). The different dimensions of quality of life associated with the different elements that characterize the obesity phenotype can be analysed through the Laval Questionnaire (Kang and Ahn 2021). This study can inform clinicians about the quality of life of people with obesity according to both the sub parameters and the results of the total score on the Laval questionnaire.

5 Conclusions

Obesity, which is seen at a high rate and whose frequency is increasing; It is an important public health problem that is the precursor of many fatal diseases and that seriously affects the quality of life in terms of physical, social, economic, and mental aspects, and it is a situation that cannot be ignored for clinicians. In conclusion, the Laval Questionnaire, which has been shown to be reliable and valid, is a scale that can be used by both clinicians and researchers to evaluate the quality of life of obese individuals in the Turkish population. In future studies, it is thought that it would be appropriate to examine the psychometric properties of the scale, which were not examined in this study, such as sensitivity to change.

6 Declarations

6.1 Study Limitations

Limitations of this study include the fact that we completed our study without considering the size of chronic diseases or categorizing them.

6.2 Acknowledgements

We would like to acknowledge and give thanks to academics G.E., EK and S.S. helped and guided all the translations.

6.3 Funding Source

No financial support was received for this research.

6.4 Competing Interests

There is no conflict of interest in this study.

6.5 Authors' Contributions

AKV and DK conceptualized the overall design. ASV, DK and FH SS analyzed the data and prepared the original draft. DK and FH participated in data interpretation and refining of the article. All authors reviewed and approved the final version of the article.

7 Human and Animal Related Study

7.1 Ethical Approval

The study was conducted at Bayraklı District Health Directorate No. 1 Healthy Life Centre (1 October 2021-15 November 2021) and Gaziemir Municipality (15 November 2021-15 March 2022). This study was performed in line with the principles of the Declaration of Helsinki. The Ethics Committee approval of the Dokuz Eylul University Research Ethics Committee was discussed, and the study was accepted with the date 10/06/2021 and the decision number 2021/27-21.

7.2 Informed Consent

Informed consent form was obtained from all participants for the study that they agreed to participate in the study.

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Incivility in Nursing Education: Experiences of Undergraduate Nursing Students

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ABSTRACT

Incivility in nursing education is a pervasive issue that significantly impacts nursing students' clinical experience and psychological well-being. This study explored the forms and frequency of incivility encountered by clinical nursing students, documented its impacts and the coping mechanisms employed, and provided recommendations for interventions. A qualitative research approach involved focus group discussions with nursing students from Ambrose Alli University. The data was transcribed and analyzed thematically. The findings revealed that nursing students frequently experience various forms of incivility, including verbal abuse, inappropriate behaviour, and unprofessional conduct from senior nurses. These behaviours led to demotivation, frustration, and psychological stress, adversely affecting students' clinical learning experiences. Coping mechanisms identified included avoidance, confrontation, and normalization, indicating a need for more effective support systems. Participants suggested several interventions to mitigate incivility, such as implementing robust regulatory frameworks, enhancing institutional support, providing education and training for senior nurses, and establishing clear reporting mechanisms. The recommendations emphasize the importance of creating a respectful and supportive learning environment for nursing students. The study's findings align with existing literature on the negative impacts of incivility in nursing education and underscore the critical need for comprehensive strategies to address this issue. Educational institutions should integrate professionalism and ethics into the curriculum, establish strong mentorship programs, and monitor clinical placements. Healthcare organizations must implement and enforce policies against incivility, provide continuous professional development, and encourage positive behaviours. Future research should focus on expanding the sample size, conducting longitudinal studies, and evaluating the effectiveness of interventions across different contexts. Addressing incivility is essential for the professional development of nursing students and the overall quality of patient care, ensuring a competent and resilient nursing workforce.

Keywords: Incivility, nursing education, clinical experience, psychological well-being, coping mechanisms

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Hemşirelik Eğitiminde Nezaketsizlik: Lisans Hemşirelik Öğrencilerinin Deneyimleri

ÖZ

Hemşirelik eğitiminde nezaketsizlik, hemşirelik öğrencilerinin klinik deneyimlerini ve psikolojik refahlarını önemli ölçüde etkileyen yaygın bir sorundur. Bu çalışma, klinik hemşirelik öğrencilerinin karşılaştığı nezaketsizliğin biçimlerini ve sıklığını araştırdı, etkilerini ve kullanılan başa çıkma mekanizmalarını belgeledi ve müdahaleler için önerilerde bulundu. Nitel bir araştırma yaklaşımı, Ambrose Alli Üniversitesi'nden hemşirelik öğrencileriyle odak grup tartışmalarını içeriyordu. Veriler yazıya geçirildi ve tematik olarak analiz edildi. Bulgular, hemşirelik öğrencilerinin kıdemli hemşirelerden sözlü taciz, uygunsuz davranış ve profesyonel olmayan davranış dahil olmak üzere çeşitli nezaketsizlik biçimleriyle sıklıkla karşılaştığını ortaya koydu. Bu davranışlar motivasyon eksikliğine, hayal kırıklığına ve psikolojik strese yol açarak öğrencilerin klinik öğrenme deneyimlerini olumsuz etkiledi. Belirlenen başa çıkma mekanizmaları arasında kaçınma, yüzleşme ve normalleştirme yer aldı ve bu da daha etkili destek sistemlerine ihtiyaç olduğunu gösterdi. Katılımcılar, sağlam düzenleyici çerçeveler uygulamak, kurumsal desteği artırmak, kıdemli hemşireler için eğitim ve öğretim sağlamak ve net raporlama mekanizmaları oluşturmak gibi nezaketsizliği azaltmak için çeşitli müdahaleler önerdiler. Öneriler, hemşirelik öğrencileri için saygılı ve destekleyici bir öğrenme ortamı yaratmanın önemini vurgulamaktadır. Çalışmanın bulguları, hemşirelik eğitiminde nezaketsizliğin olumsuz etkilerine ilişkin mevcut literatürle uyumludur ve bu sorunu ele almak için kapsamlı stratejilere duyulan kritik ihtiyacın altını çizmektedir. Eğitim kurumları, müfredata profesyonellik ve etiği entegre etmeli, güçlü mentorluk programları oluşturmalı ve klinik yerleştirmeleri izlemelidir. Sağlık kuruluşları nezaketsizliğe karşı politikalar uygulamalı ve yürürlüğe koymalı, sürekli mesleki gelişim sağlamalı ve olumlu davranışları teşvik etmelidir. Gelecekteki araştırmalar, örneklem boyutunu genişletmeye, uzunlamasına çalışmalar yürütmeye ve müdahalelerin farklı bağlamlardaki etkinliğini değerlendirmeye odaklanmalıdır. Nezaketsizliği ele almak, hemşirelik öğrencilerinin mesleki gelişimi ve hasta bakımının genel kalitesi için, yetkin ve dayanıklı bir hemşirelik iş gücü sağlamak açısından önemlidir.

Anahtar Kelimeler: Nezaketsizlik, hemşirelik eğitimi, klinik deneyim, psikolojik iyilik hali, başa çıkma mekanizmaları

1 Introduction

Nursing education is a pivotal tool in preparing nurses to deliver high-quality patient care, more so, the learning environment significantly affects nursing students' educational experiences and professional development (Lofgren et al., 2023; Sumpter et al., 2022). Incivility behaviours have been reported as one of the major problems in the clinical setting of the nursing profession (Kim & Yi, 2023; Naseri et al., 2023). Evidence has shown a significant correlation between perceived incivility and stress among final-year nursing students, suggesting that higher levels of incivility are associated with increased stress (Urban et al., 2021). According to Naseri, et al., (2011) incivility which is characterized by rude or discourteous behavior, has become a pressing issue in nursing education, adversely impacting students' clinical experiences, psychological well-being, and professional growth. The problem of incivility in nursing is complex and has gathered significant attention, with empirical evidence showing major negative implications for nurses, patients, and healthcare organizations (Alsadaan et al., 2024; Atashzadeh Shoorideh et al., 2021).

This study aims to explore, understand and document the uncivil behaviors directed at nursing students by qualified nurses. Incivility in clinical settings includes low-intensity deviant behaviors like verbal abuse, passive-aggressive actions, and social exclusion (Atashzadeh Shoorideh et al., 2021; Rushton & Stutzer, 2015). Such behaviors violate workplace norms and/or ethics of common respect and courtesy, significantly affecting nursing students due to their apprentice status and dependence on clinical instructors for guidance (Thomas, 2010). Incivility hinders students' educational experiences, negatively impacting their learning outcomes, clinical performance, and professional development, while also causing psychological distress such as increased anxiety, stress, and burnout (Lewis, 2023; Peng, 2023).

Empirical evidence indicates that nursing students frequently encounter incivility during clinical rotations, often from staff nurses, peers, and patients (Amoo et al., 2021). Globally, over 70% of nursing students report experiencing some form of incivility during their clinical education (Clark & Springer, 2010). Regionally, in North America and Europe, rates of incivility range between 50-80%, with variations depending on specific institutional cultures (Luparell, 2011).

In Africa, research indicates that a significant number of nursing students face incivility during their clinical training (Penconek et al., 2024). In Nigeria, this issue is especially pronounced, with a substantial portion of nursing students reporting experiences of incivility that greatly hinder their academic performance and clinical competence (Anarado et al., 2016).

Empirical evidence has shown that incivility in the workplace can lead to increased stress, emotional exhaustion, decreased job satisfaction, higher turnover rates, and compromised patient care due to disrupted communication and teamwork (Khan et al., 2021; Laschinger, 2014). Kim and Yi, (2023) explore the relationships between incivility, coping mechanisms, and satisfaction with clinical practice, finding that effective coping strategies can mitigate the negative impacts of incivility.

While there is extensive research on incivility in general healthcare settings, there remains a lack of empirical reports specifically addressing the experiences of nursing students in Nigeria. Most existing studies focus on the experiences of registered nurses and other healthcare professionals (Alsadaan et al., 2024; El Ghaziri et al., 2022), while only a handful focused on workplace violence (Agbaje et al., 2021; Elom et al., 2024) and incivility to nursing students (Amoo et al., 2021; Curtis et al., 2007) leaving a critical gap in understanding how incivility affects the learning and professional development of nursing students. Furthermore, despite the prevalence of incivility, the specific experiences and impacts on nursing students remain underexplored, especially in Nigeria. Factors contributing to incivility in Nigerian clinical settings include cultural norms, hierarchical structures, workload stress, insufficient communication training, and ineffective leadership (Odiri, 2024). Addressing these issues is crucial to creating a respectful clinical learning environment and improving the educational and professional outcomes for nursing students.

2 Methodology

This study adopted a qualitative-descriptive research approach to describe and document the experiences of clinical undergraduate nursing students at Ambrose Alli University (AAU) regarding incivility in nursing education. This approach focuses on the rich qualitative data derived from participants' descriptions and personal accounts (Polit & Beck, 2014). The study was conducted among 300 and 500-level undergraduate nursing students from the Department of Nursing Science, AAU, which is located in Ekpoma, Edo State, Nigeria.

A total of twenty-one (21) participants were included in this study. This sample was made up of two (2) separate focus group discussions (FGDs) using a purposive sampling technique. The first discussion group consisted of twelve (12) participants, while the second FGD included nine (9) participants. The sample comprised students who had relevant experiences and were willing to discuss them in the study. In qualitative research, the sample does not necessarily reflect the amount of data available or the depth of investigation (Hennink & Kaiser, 2022). However, the second FGD was conducted to compare and ensure data saturation. The following research questions guided this study:

1. What are the forms and frequency of incivility encountered by clinical nursing students?

2. Does incivility toward nursing students in clinical postings impact their overall experience and psychological well-being?
3. What coping mechanisms are employed by nursing students in response to incivility in the clinical environment?
4. What recommendations can be made for interventions to mitigate incivility and support nursing students in clinical settings?

All interviews were conducted by the researchers, led by the leading author, to maintain consistency in data collection. The FGDs were guided by an unstructured interview guide, which allowed participants to comprehensively describe their experiences, ensuring the collection of holistic qualitative data (Polit & Beck, 2014). The interview guide included sections on student characteristics and questions guiding the FGDs. The research questions, which focused on understanding the forms, impacts, and coping mechanisms related to incivility in nursing education, as well as suggestions for interventions, were developed with careful consideration and presented to experts from both clinical and academic fields for validation prior to data collection. This expert review process ensured that the research questions were well-aligned with the study's objectives. The study ensured validity and reliability based on criteria suggested by Lincoln and Guba: credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985). Each FGD session, lasting approximately 45 minutes, was audio-recorded with participant consent. The FGDs were held in a private office at AAU to minimize distractions and ensure data richness. Participants were assigned codes to maintain confidentiality. More so, the entire process for data collection took place over a period of three months, from April to June 2024. Ethical approval for the study was duly obtained and permission was also granted by the Department of Nursing Science, AAU, Ekpoma.

Thematic analysis was employed to analyze the collected data, with audio-recorded interviews transcribed verbatim and checked for accuracy. Coding was performed to generate themes and sub-themes and the analyzed data is presented in themes, categories, and excerpts, preserving the holistic nature of the participants' narratives.

3 Results

The generated data are presented in tables, showing the themes, sub-themes, and excerpts as they emerged. Table 1 consists of 21 participants, providing a diverse sample in terms of age, gender, religion, and class level. Participants in FGD 1 range in age from 21 to 27 years. The age distribution is fairly balanced, though there is a slight clustering around certain age groups. The largest group comprises 22-year-olds (eight participants), followed by 24-year-olds (four participants), and a mix of 21-year-olds (three participants), 23-year-olds (three participants), 25-year-olds (three participants), and 26-year-olds (three participants). The gender distribution in this focus group is predominantly female, with 17 females and 4 males. Religious affiliation is divided between Christianity and Islam. The majority of participants are Christians (16), while Muslims make up a smaller group (5). This religious composition reflects a similar trend to the previous dataset, with Christianity being the predominant religion among participants. The presence of both religious groups allows for a range of perspectives but highlights the need to consider the potential predominance of Christian viewpoints in the discussions. Participants' academic levels range from 300 to 500, covering various stages of university education. A significant portion of the group is at the 500 level (12 participants), indicating that many are in their final year or near graduation. There are also participants at the 400 level (8 participants) and a smaller number at the 300 level (3 participants).

Table 1: Showing p*articipants information*

FGD Participants	Age	Gender	Religion	Class-Level
Participant 1	23	Female	Muslim	500
Participant 2	22	Male	Christianity	500
Participant 3	22	Female	Christianity	500
Participant 4	25	Female	Christianity	400
Participant 5	23	Female	Christianity	300
Participant 6	26	Male	Christianity	400
Participant 7	24	Female	Christianity	400
Participant 8	22	Female	Muslim	500
Participant 9	22	Female	Christianity	500
Participant 10	23	Female	Muslim	300
Participant 11	25	Female	Christianity	400
Participant 12	26	Female	Christianity	400
Participant 13	21	Female	Christianity	500
Participant 14	24	Female	Christianity	300
Participant 15	27	Male	Christianity	500
Participant 16	22	Female	Christianity	400
Participant 17	25	Female	Muslim	500
Participant 18	22	Female	Christianity	400
Participant 19	24	Female	Christianity	400
Participant 20	21	Female	Muslim	400
Participant 21	26	Female	Muslim	500

This table 2 categorizes the various forms of incivility encountered by nursing students in their clinical placements. The major categories identified are verbal abuse and inappropriate behavior. Verbal Abuse is further divided into name-calling, where students reported being called derogatory names such as "fools" and "dumb," creating a hostile and disrespectful learning environment. While inappropriate behavior includes sexual harassment, where students faced inappropriate advances from senior nurses, and unprofessional conduct, where students witnessed nurses allowing them to make mistakes intentionally and then reprimanding them for those mistakes.

Table 2: *Showing theme 1: Forms of incivility*

Theme	Subtheme	Excerpts
Forms of Incivility	**Verbal Abuse**	**Name-Calling** "The first thing she said was, you all are fools... Next thing she said that, so you all saw me call me and you were all still sitting down." (P18) "When you ask questions, the next thing is, are you dumb?" (P13)
	Inappropriate Behavior	**Sexual Harassment** "There was this woman... she called me privately into her office, she was like, what's the type of girls? ... She was not like, okay, girls like me? A married woman for that matter." (P2)
		Unprofessional Conduct "One of my colleagues gave the injection wrongly. And the woman intentionally watched that, give it wrong... She just shouted and we're all shocked." (P2)

This table 3 outlines the impact of incivility on nursing students' clinical experience and psychological well-being. The major categories are Demotivation and Frustration and Psychological Stress. Demotivation and frustration are exemplified by students' experiences of being assigned tasks that offer little educational value, leading to frustration and a sense of wasted time. While psychological stress is shown through the emotional toll that incivility takes on students, with some considering leaving the profession due to the hostile environment and constant stress.

Table 3: *Showing theme 2: Impact on clinical experience and psychological well-being*

Theme	Sub-theme	Excerpts
Impact on Clinical Experience and Psychological Well-Being	**Demotivation and Frustration**	**Lack of Educational Value** "How can you just be putting student nurses on vital signs every day? And then empty urine... because to them, that's the kind of irritating part that they don't want to do." (P13) "Like there, I learned nothing, to be sincere... They never taught us anything." (P13)
	Psychological Stress	**Emotional Toll** "I had a very, very, very horrible experience that if I wasn't having passion for this nursing profession, I would have quit." (P18) "Each time you ask questions... they will start shouting... You cannot use it to browse. It's always like that." (P13)

This table 4 presents the coping mechanisms employed by nursing students in response to incivility. The major categories are avoidance and non-confrontation, direct confrontation, and normalization. Avoidance and non-confrontation include withdrawal, where students avoid the clinical environment to escape the negative behavior. Direct confrontation involves seeking dialogue, where some students prefer to address the issue directly with the offending nurse to find a resolution. While normalization includes acceptance, where students come to accept the incivility as a normal part of their experience to cope with it.

Table 4: *Showing theme 3: Coping mechanism*

Theme	Subtheme	Excerpts
Coping Mechanisms	**Avoidance and Non-Confrontation**	**Withdrawal** "Me personally, I think after one week, I packed my things and I stopped going to the posting. I gave one funny excuse, which I can't even remember." (P13) "I don't care person. I just stop coming. Even if I know that it will affect me, I will just stay back to avoid being insulted or shouted at." (P2)
	Direct Confrontation	**Seeking Dialogue** "I would rather meet the person and express myself that why I'm here to learn." (P1)
	Normalization	**Acceptance** "When we encounter such people, we should take it like it's a normal thing, so that we'll be able to overcome this." (P5)

This table 5 details the recommendations provided by participants for interventions to mitigate incivility. The major categories are Regulatory and Legal Framework, Institutional Support and Monitoring, Education and Training, and Reporting Mechanisms. Regulatory and Legal Framework involves Policy Implementation to establish legal and procedural guidelines to address incivility. Institutional Support and Monitoring includes University Involvement to actively monitor and support students during their clinical placements. Education and Training focuses on providing Senior Nurses Guidance to ensure they understand their responsibilities and appropriate behavior towards student nurses. Reporting Mechanisms suggest Establishing Platforms for students to report incidents of incivility, ensuring these reports lead to meaningful actions.

Table 5: *Showing theme 4: Recommendations for interventions*

Theme	Subtheme	Excerpts
Recommendations for Interventions	**Regulatory and Legal Framework**	**Policy Implementation** "There should be like a legal document which is backing this bullying on nurses." (P18) "It should be a written thing, so that if they go through it, they will know the right thing to teach the students." (P11)
	Institutional Support and Monitoring	**University Involvement** "The school should take it upon themselves... There should be a stated rule that these students should not come back with any negative news." (P4) "The university too have a lot to do regarding the students they send for posting to as well." (P9)
	Education and Training	**Senior Nurses Guidance** "Inform the senior nurses that the ones coming up, whenever they come to you, this is what you should do and this is what you should not do." (P11)
	Reporting Mechanisms	**Establishing Platforms** "There should be a platform or somebody that, if we encounter this type of people with this attitude, we can report to them so that they can sanction them or something like that." (P5)

4 Discussion

The major findings of this study are discussed under the following themes: Forms of Incivility, Impact on Clinical Experience and Psychological Well-Being, Coping Mechanisms, and Recommendations for Interventions.

4.1 Forms of Incivility

Participants reported various forms of incivility, including verbal abuse, inappropriate behavior, and unprofessional conduct. Verbal abuse, including derogatory name-calling such as "fools" and "dumb," is a manifestation of power dynamics within the educational setting that exacerbates a toxic culture. This form of incivility not only diminishes students' self-worth but also perpetuates a cycle of fear and anxiety that hinders the learning process. Clark (2017) emphasizes that verbal abuse can lead to a decrease in cognitive functioning, as students become preoccupied with their emotional turmoil rather than their studies. The hostile environment created by such abuse may also contribute to increased dropout rates, as students struggle to cope with the constant degradation. Furthermore, the normalization of verbal abuse within the clinical environment can desensitize both staff and students, leading to a broader acceptance of incivility as a part of the educational experience, thus perpetuating its existence.

The issue of sexual harassment in clinical settings, as highlighted by a participant, emphasizes a significant ethical breach within nursing education. Empirical evidence has emphasized how sexual harassment, particularly when perpetrated by senior staff, not only violates the personal boundaries of students but also undermines the integrity of the nursing profession (McDonald, 2012). The psychological distress experienced by victims of such harassment can have long-lasting effects, including anxiety, depression, and post-traumatic stress disorder (PTSD). The power imbalance between students and senior nurses makes it challenging for victims to report these incidents, leading to a culture of silence and complicity (van der Velden et al., 2023). This lack of accountability further erodes trust in the educational system and can deter future students from pursuing careers in nursing, ultimately affecting the profession's ability to attract and retain competent practitioners.

Instances of unprofessional conduct, where students are intentionally set up to fail, reveal a deeper issue of systemic dysfunction within nursing education. Rushton and Stutzer, (2015) the detrimental impact of such behavior on students' academic and professional development. When educators engage in sabotage, it not only demoralizes students but also undermines the very purpose of education, which is to nurture and develop competent healthcare professionals. The deliberate setting up of students to fail can also be seen as a reflection of broader issues within the educational system, such as inadequate faculty training, lack of oversight, and a failure to enforce ethical standards. This type of incivility not only compromises the educational process but also raises questions about the overall quality and safety of patient care, as students who are subjected to such treatment may not be adequately prepared for their future roles as nurses.

4.2 Impact on Clinical Experience and Psychological Well-Being

The assignment of menial tasks that offer little educational value is a form of incivility that significantly undermines the clinical experience for nursing students. Curtis, et. al., (2007) emphasized that clinical placements are crucial for the development of practical skills and the application of theoretical knowledge. When students are relegated to tasks that do not challenge them or contribute to their learning, it stifles their professional growth and delays their acquisition of essential competencies. This

not only frustrates students but also creates a sense of purposelessness, as they are unable to see the relevance of their training to real-world nursing practice.

Moreover, such practices echo a deeper issue within the clinical environment, where students are often seen as a burden rather than as future colleagues. This attitude can lead to a lack of mentorship and support, further exacerbating the disconnect between what students learn in the classroom and what they experience in the clinical setting (Hill et al., 2022). Over time, this can diminish students' confidence in their abilities, making them less prepared for the demands of the profession.

The persistent exposure to incivility in the clinical environment takes a significant psychological toll on nursing students. Laschinger (2014) highlights how experiences of incivility, including being belittled or marginalized, contribute to feelings of burnout, anxiety, and depression among students. These psychological effects are not just short-term responses to stress but can have lasting impacts on students' mental health and their ability to function effectively in clinical settings.

The stress and emotional strain caused by incivility can lead to a decrease in cognitive function, making it difficult for students to concentrate, retain information, and make sound clinical judgments (Huang et al., 2020). This is particularly concerning in nursing practice, where the ability to think clearly and act decisively is critical. When students feel unsupported and devalued, their motivation to learn and engage in the clinical experience diminishes, leading to disengagement and, in some cases, a decision to leave the profession altogether.

The impact of incivility on clinical experience and psychological well-being points to the need for a cultural shift within clinical environments. Nursing education should not only focus on imparting technical skills but also on fostering a culture of respect, support, and professionalism. A supportive clinical environment is essential for the well-being and professional growth of nursing students, as it allows them to develop the confidence and competence necessary to become effective healthcare providers (Atashzadeh Shoorideh et al., 2021). To achieve this, clinical environments must prioritize the creation of positive learning experiences, where students are given opportunities to engage in meaningful tasks that contribute to their skill development. Mentorship programs can bridge this gap, as they provide students with guidance, feedback, and encouragement from experienced practitioners. Furthermore, there needs to be a zero-tolerance policy for incivility, with clear procedures for reporting and addressing such behavior.

4.3 Coping Mechanisms

Avoidance as a coping mechanism is a common response to stress and incivility. A study notes that avoidance can provide temporary emotional relief by helping individuals distance themselves from distressing situations (Folkman & Moskowitz, 2004). For nursing students, avoiding confrontations with senior staff who exhibit incivility might reduce immediate stress and anxiety, allowing them to focus on their tasks without the added emotional burden. However, the reliance on avoidance as a primary coping strategy can have significant long-term consequences.

Avoidance fails to address the underlying issues of incivility, allowing these behaviors to persist unchallenged within the clinical environment. Over time, this can lead to a culture where incivility is normalized, and students may begin to internalize the belief that such behaviors are an inherent part of the nursing profession. Moreover, avoidance can contribute to a sense of isolation among students, as they may feel unable to seek support or address their concerns, ultimately affecting their psychological well-being and professional development.

Direct confrontation, where students choose to address the offending behavior head-on, can be both empowering and risky. Khan et al., (2021) suggest that confronting incivility can lead to positive outcomes, such as improved interpersonal relationships and a more supportive learning environment. When successful, direct confrontation can help to dismantle power imbalances, promote open communication, and encourage a culture of mutual respect. For the students who take this approach, it can also be an opportunity to develop important conflict resolution skills, which are essential in the nursing profession.

However, the success of direct confrontation largely depends on the specific environment and the individuals involved. In hierarchical environments such as nurses in clinical settings, where power dynamics are often skewed, students may face backlash or further victimization if the confrontation is not handled appropriately or if the offending nurse is resistant to change. Additionally, students who confront incivility may not always have the necessary support from their supervisors, leaving them vulnerable to further stress and potential retaliation. Therefore, while direct confrontation can be an effective coping mechanism, it requires careful consideration and, ideally, the backing of institutional policies that protect students from negative repercussions.

Normalization of incivility as a coping mechanism is particularly concerning, as it involves students accepting negative behaviors as a regular and expected part of their clinical experience. Empirical evidence warn that normalization not only perpetuates incivility but also erodes the professional standards and ethical foundations of nursing education (Clark, 2008). When students begin to view incivility as "just the way things are," they are less likely to report or challenge these behaviors, leading to a vicious cycle where incivility becomes entrenched in the culture of clinical practice.

The normalization of incivility can have far-reaching consequences, including the desensitization of students to unprofessional conduct, which they may later replicate as they transition into professional roles. This perpetuation of negative behaviors threatens the overall quality of patient care and undermines efforts to create a positive and safe working environment in healthcare settings. Furthermore, the internalization of incivility can contribute to long-term psychological distress, as students may develop feelings of helplessness, low self-esteem, and burnout.

4.5 Recommendations for Interventions

The recommendation to implement regulatory and legal frameworks to address incivility underlines the need for a formalized approach to managing and mitigating these behaviors. Regulatory frameworks provide a clear and consistent standard for what constitutes acceptable behavior, thereby reducing ambiguity and ensuring that all stakeholders are aware of the expectations. Legal frameworks, on the other hand, offer a mechanism for enforcing these standards and holding individuals accountable for their actions.

Peng (2023) emphasizes the importance of clear policies in reducing incivility, as they provide a structured approach to addressing these issues. When incivility is clearly defined and codified in policies, it empowers institutions to take decisive action against offenders and provides a basis for legal recourse if necessary (Peng, 2023). Moreover, regulatory and legal frameworks help to protect students by ensuring that there are consequences for unprofessional conduct, thereby deterring potential perpetrators and fostering a safer learning environment.

However, the effectiveness of these frameworks depends on their implementation and enforcement. Institutions must commit to upholding these standards consistently, which requires adequate resources,

training, and a willingness to address issues head-on. Without strong enforcement, even the most well-designed frameworks may fail to bring about meaningful change.

Institutional support is critical in combating incivility, as it reflects the commitment of educational institutions to the well-being and professional development of their students. Active university involvement in monitoring clinical placements, can help create a more positive learning environment by ensuring that students are placed in settings where they are respected, supported, and given the opportunity to thrive (Hunt & Marini, 2012).

Increased institutional support can take many forms, including providing resources for mental health and counseling services, establishing mentorship programs, and ensuring that faculty members are trained to recognize and address incivility. Institutions must also foster a culture of openness, where students feel comfortable reporting incidents of incivility without fear of retaliation. This requires a commitment to transparency and accountability, where both students and staff are held to high standards of conduct.

Furthermore, institutional support extends to creating an environment where feedback is encouraged and valued. When students and staff are able to provide constructive feedback on their experiences, it allows for continuous improvement in how incivility is managed and addressed. This collaborative approach can help to identify systemic issues and develop strategies that are responsive to the needs of the educational community.

The training of clinical nurses on appropriate professional behaviors, is critical for reducing incivility and fostering a culture of respect and mentorship (Cottingham et al., 2011). Clinical nurses are vital in shaping the clinical learning environment, and their behavior sets the tone for how students are treated. A study suggested that, providing training on professionalism, communication, and conflict resolution, institutions can help clinical nurses develop the skills needed to mentor students effectively and model positive behaviors (Gong et al., 2022).

Training programs should focus on raising awareness of the impact of incivility on students' psychological well-being and educational outcomes. Nurses in clinical settings need to understand how their actions can either support or undermine the development of future nurses. Furthermore, these programs should equip nurses with strategies for addressing incivility when it occurs, ensuring that they can intervene appropriately and prevent the escalation of negative behaviors (Clark, 2017).

The success of these training programs hinges on institutional buy-in and support. It is not enough to offer training as a one-time event; ongoing professional development and reinforcement of these principles are necessary to create lasting change. Institutions must also recognize and reward positive behaviors, reinforcing the importance of professionalism and mentorship in nursing education.

Effective reporting mechanisms are essential for addressing incidents of incivility promptly and appropriately. The Joint Commission highlights the importance of having clear and accessible platforms for reporting, as this ensures that issues are brought to light and addressed before they can cause further harm ("Committee Opinion No. 683: Behavior That Undermines a Culture of Safety," 2017). Reporting mechanisms must be designed to protect the confidentiality of students and staff, preventing retaliation and ensuring that individuals feel safe coming forward.

For these mechanisms to be effective, they must be supported by a robust response system that investigates reports thoroughly and takes appropriate action. Institutions should establish clear protocols

for how reports are handled, including timelines for investigation and resolution. Additionally, there should be a focus on providing feedback to those who report incidents, ensuring that they are kept informed of the progress and outcome of their case. The implementation of reporting mechanisms also requires a cultural shift within institutions. Students and staff must be encouraged to see reporting not as a punitive measure but as a tool for improving the educational environment. By fostering a culture of accountability and continuous improvement, institutions can create a more supportive and respectful learning environment for all.

4.6 Implications to Nursing

This study has several critical implications for the nursing profession. These implications span across educational institutions, clinical settings, nursing practice, and policy development.

1. Educational Institutions: Nursing curricula should include comprehensive modules on professionalism, ethics, and respectful communication. Emphasizing these areas can prepare nursing students to both exhibit and expect respectful behaviors in clinical settings. By embedding these topics within the curriculum, educational institutions can foster a culture of respect and professionalism, thereby reducing the incidence of incivility. Furthermore, establishing strong mentorship programs where experienced nurses guide and support students can help mitigate the impact of incivility. Effective mentorship can provide students with the necessary support and resilience to navigate and cope with negative experiences. Furthermore, educational institutions must actively monitor clinical placements and gather regular feedback from students to ensure a supportive learning environment. Proactive oversight can help identify and address issues of incivility promptly, thereby protecting students' well-being and enhancing their learning experience.

2. Clinical Settings: Healthcare organizations should implement and enforce clear policies against incivility and bullying. Clear policies and consequences for incivility can deter negative behaviors and promote a respectful workplace culture. Secondly, ongoing training programs focused on communication skills, conflict resolution, and professional behavior should be mandatory for all nursing staff. Regular training can equip nurses with the skills to maintain a professional and supportive environment, reducing instances of incivility. Thirdly, encouraging and rewarding positive behaviors and professionalism among staff can contribute to a healthier work environment. Recognition and rewards for positive behaviors can reinforce a culture of respect and support among nursing staff.

3. Nursing Practice: Nurses should be held accountable for their behavior and encouraged to uphold high standards of professionalism and respect. Holding individuals accountable can reduce unprofessional conduct and foster a more respectful practice environment. Secondly, facilitating team-building activities and encouraging collaboration can strengthen relationships and reduce conflicts among nursing staff. Stronger team dynamics can lead to better communication and reduced incidences of incivility. Thirdly, developing robust support networks within the nursing community can help individuals cope with the stresses of the profession. In addition, access to support networks can enhance nurses' resilience and ability to manage workplace challenges, including incivility.

4. Policy Development: Developing and enforcing legislative frameworks that address workplace incivility and protect healthcare workers. Legislative measures can provide a formal mechanism to address and reduce workplace incivility, ensuring a safer and more supportive environment for nurses. Secondly, establishing anonymous reporting systems for incidents of incivility can help in identifying and addressing issues without fear of retaliation. Anonymous reporting can encourage more individuals to report incidents of incivility, allowing for timely interventions and resolution.

Lastly, encouraging ongoing research into the causes, effects, and solutions for incivility in nursing can lead to continuous improvement in policies and practices. Research can provide evidence-based strategies to combat incivility, ensuring that interventions are effective and relevant.

5 Conclusions

Incivility in nursing education highlights deeper systemic issues that prioritize hierarchy over student support. To address this, there is a need for systemic change, including comprehensive policies that promote professionalism, accountability, and a supportive environment. Educational institutions should focus on students' mental and emotional well-being, provide faculty training to address incivility, and establish clear reporting mechanisms.

Creating a culture of respect and mutual support is essential for both student well-being and the integrity of the nursing profession. Effective interventions include conflict resolution training, mentorship programs, and robust policies to address and report incivility. Institutions must collaborate to foster resilience in students, offering resources like mental health services and resilience training to help them navigate challenges and maintain their well-being. By prioritizing these changes, nursing education can create a more respectful and supportive environment, essential for the future of the profession.

6 Declarations

6.1 Study Limitations

This study was limited to a selected few undergraduate nursing students of Ambrose Alli University who are within the clinical set with the experience under inquiry and also are willing to express themselves fully. More so, they may not be representative of the broader nursing student population, which is a nature for qualitative studies. Furthermore, the study included participants from two (2) levels of the Department of Nursing Science.

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There is no person or institution contributing to this research other than the authors.

6.3 Funding Source

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6.4 Competing Interests

There is no conflict of interest in this study.

6.5 Authors’ Contributions

Define the contribution of each researcher named in the paper to the paper.

Arunibebi L. LAWRENCE: Developing ideas, sourced and wrote the introduction, methodology, and discussion, planning the materials and methods to reach the results, taking responsibility for the conducting the focus group discussion, organizing and reporting the data, taking responsibility for the explanation and presentation of the results, taking responsibility for the creation of the entire manuscript, reworking not only in terms of spelling and grammar but also intellectual content or other contributions.

2. Jessica A. JIMMY: contributed in the following areas: planning the materials and methods to reach the results, assisted in organizing and reporting the data, taking responsibility for the analysis and presentation of the results, taking responsibility for the literature review during the research.

3. Tari AMAKOROMO: contributed in the following areas: assisted in refining the ideas, planning the materials and methods to reach the results, assisted in the focus group discussion, organizing and reporting the data, assisted in analysis and presentation of the results, taking responsibility for the grammatical efficiency.

4. Jovita EHIGWAMI: contributed in the following areas: planning the materials and methods to reach the results, took responsibility in leading the focus group discussion, transcribing, and reporting the data; reworking not only in terms of spelling and grammar but also intellectual content or other contributions.

7 Human and Animal Related Study

7.1 Ethical Approval

Approval was obtained from the Ethical Committee, Ambrose Alli University, Ekpoma. Approval Number: AAUREC/NUR/Vol.12/24/03

7.2 Informed Consent

All participants duly gave consent to be part of this study.

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SAKARYA UNIVERSITY OF APPLIED SCIENCES

Kanserli Çocukta Malnütrisyon Gelişmesinde Rol Oynayan Faktörler

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ÖZ

Çocukluk çağı kanserleri, doğum ile 19 yaş arasında ortaya çıkan, anormal hücrelerin kontrolsüz bölünmesiyle karakterize, oluştuğu dokuyla sınırla kalmayıp vücudun farklı bölgelerine de yayılabilen ve çok ciddi zararlarla birlikte tedavi edilemediğinde ölüme sebebiyet veren bir hastalık grubudur. Kanserli çocuklar, erken tanı ve uygun tedavi yöntemleriyle iyileştirilebilmektedir. Ayrıca hastaya uygulanan kemoterapi, radyoterapi ve/veya cerrahi tedavi çeşitli vücut sistemlerini etkileyen fiziksel, psikososyal ve nörobilişsel sorunlara ve semptomlara sebebiyet verebilmektedir. Hastalığın seyri boyunca değişen metabolik etkiler, enerji gereksiniminin değişmesi, tümörün yerine ve boyutuna ve hastanın duygu durumuna bağlı değişen psikolojik süreçleri de başta hastanın beslenme durumu olmak üzere birçok fizyolojik ve psikolojik süreci olumsuz yönde etkileyebilmektedir. Tüm bu faktörler sebebiyle kanserli çocuklarda ishal, mukozit, bulantı, kusma, yutma güçlüğü, tat ve koku bozuklukları, reflü, bağırsak tıkanıklıkları, kanamalar, malabsorpsiyonlar, hipermetabolizma, katabolik sürecin artışı, anoreksi ve/veya kaşeksi gibi uzun vadede malnütrisyona sebebiyet verecek sağlık problemlerinin yaşanması kaçınılmaz olmaktadır. Kanserin tedavisinde beslenmenin önemi çok büyüktür. Geç teşhis veya düzeltilemeyen bu sağlık problemlerinden kaynaklı yeterli besin alınamaması, alınması gerekenden çok fazla veya dengesiz oranlarda besin alınması hastada ciddi oranda malnütrisyona sebebiyet verebilmektedir. Bunun için hastanın tanıdan itibaren hastalık ve beslenme takibi büyük önem arz etmektedir. Kılavuzlar ışığında, ekip çalışması ile uygun tedavi protokolünün uygulanması kanserli çocuklarda yaşam kalitesini artırıp, iyileşme sağlanması açısından çok önemlidir. Derleme olarak hazırlanan bu makale için literatür taraması; Google Akademik, Dimensions ve Pubmed veri tabanlarındaki farklı çalışmalar taranarak yapılmıştır. Kohort çalışmaları, insan çalışmaları üzerine hazırlanan meta-analizler ve retrospektif çalışmalar da dahil olmak üzere birçok türde farklı kaynaktan kanserli çocuklarda malnütrisyona sebep olan etmenler ve bu etmenlerin genel etkilerinin araştırılması amaçlanmış olup konuya ilişkin yapılan çalışmalarda genel kabul görmüş makaleler derlemeye dahil edilmiştir.

Anahtar Kelimeler: Malnütrisyon, kanserli çocuk, beslenme, tedavi

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Factors Playing a Role in the Development of Malnutrition in Children with Cancer

ABSTRACT

Childhood cancers are a group of diseases that occur between the ages of birth and 19, are characterized by the uncontrolled division of abnormal cells, are not limited to the tissue in which they occur, but can also spread to different parts of the body and cause death when left untreated with very serious damage. Children with cancer can be cured with early diagnosis and appropriate treatment methods. In addition, chemotherapy, radiotherapy and/or surgery can cause physical, psychosocial and neurocognitive problems and symptoms affecting various body systems. The metabolic effects that change during the course of the disease, changes in energy requirements, psychological processes that change depending on the location and size of the tumour and the patient's emotional state can negatively affect many physiological and psychological processes, especially the patient's nutritional status. Due to all these factors, it is inevitable that children with cancer will experience health problems such as diarrhea, mucositis, nausea, vomiting, dysphagia, taste and smell disorders, reflux, intestinal obstructions, bleeding, malabsorption, hypermetabolism, increased catabolic process, anorexia and/or cachexia, which will cause malnutrition in the long term. Nutrition is of great importance in the treatment of cancer. Late diagnosis or inadequate nutrient intake due to these health problems that cannot be corrected, taking too much or unbalanced amounts of nutrients can cause serious malnutrition in the patient. For this reason, the disease and nutrition follow-up of the patient from diagnosis is of great importance. Implementation of the appropriate treatment protocol with teamwork in light of guidelines is very important in terms of improving the quality of life and providing recovery in for children with cancer. The literature review for this article, which was prepared as a review, was conducted by searching different studies in Google Scholar, Dimensions and Pubmed databases. It was aimed at investigating the factors causing malnutrition in children with cancer and the general effects of these factors from many different sources, including cohort studies, meta-analyses prepared on human studies and retrospective studies, and generally accepted articles.

Keywords: Malnutrition, child with cancer, nutrition, treatment

1 Giriş

Kanser, anormal hücrelerin kontrolsüz bir şekilde büyümesi, normal sınırlarının ötesine geçerek vücudun farklı kısımlarını istila etmesi ve/veya diğer organlara yayılmasıyla vücudun hemen hemen her organında veya dokusunda başlayabilen geniş bir hastalık grubudur (Yin et al., 2021). Çocukluk çağı kanseri ise doğum ile 19 yaş arasında ortaya çıkan çeşitli ve heterojen bir nadir kanser grubudur. Çocukluk çağı kanserleri, anormal hücrelerin kontrolsüz bölünmesiyle sonuçlanan mutasyonlar edinmiş embriyonal dokulardan kaynaklanmakla birlikte tedavi edilmemesi durumunda, bu anormal hücreler hızla vücuda yayılarak daha fazla zarara ve nihayetinde ölüme sebep olmaktadır. Erken tanı ve uygun tedaviler, kanserli hücreleri ortadan kaldırarak veya öldürerek, iyileşme sağlamayı amaçlamaktadır (Zahnreich & Schmidberger, 2021).

Dünya Sağlık Örgütü verilerine göre küresel değerlendirmede görülen total kanserlerin %1' i çocukluk çağı kanserini oluşturmaktadır (Akdeniz Kudubes et al., 2022). Türkiye görülen çocukluk çağı kanserleri araştırmaları sonucunda her yıl ortalama 2500-3000 çocuğa kanser tanısı konulduğu saptanmıştır (Kebudi & Alkaya, 2021). Ayrıca Uluslararası Çocukluk Çağı Kanseri İnsidansı (GLOBOCAN) verilere göre çocukluk çağı kanserleri görülme prevalansında Güney-Orta Asya Bölgesi, Doğu Asya ve Latin Amerika ve Karayipler bu sıralamada ilk üç bölgeyi temsil etmektedir (Johnston et al., 2021).

Genel olarak, coğrafyaya göre farklılık göstermekle birlikte en yaygın çocukluk çağı kanserleri lösemi (kemik iliği ve lenfatik sistem), göz, beyin ve diğer merkezi sinir sistemi neoplazmları, nöroblastom

(birden fazla bölge, genellikle adrenal bezler), lenfoma (bağışıklık hücreleri) ve böbrek tümörleri ve idrar yolu kanserleridir (Shabani et al., 2020).

Çocuklarda kanser tedavisi, çeşitli vücut sistemlerini etkileyen fiziksel, psikososyal ve nörobilişsel sorunlara ve semptomlara sebebiyet vermektedir. Çocukluk çağı kanserlerinde tümöre bağlı olarak, metabolik değişikliklerden kaynaklı nedenler, kemoterapiye ve radyoterapiye bağlı nedenler, depresyon ve psikolojik nedenlerden kaynaklı, enerji gereksinimin değişmesine ve yapılan cerrahi operasyona bağlı olarak gelişen çeşitli gastrointestinal problemler yapılan çalışmalar sonucu malnütrisyon sebebi olarak değerlendirilmiştir (Teixeira et al., 2021). Malnütrisyon, "enerji, protein ve diğer besin maddelerinin eksikliği, fazlalığı veya dengesizliğinin doku/vücut şekli, boyutu, bileşimi ve işlevi ile klinik sonuç üzerinde ölçülebilir olumsuz etkilere neden olduğu bir beslenme durumu olarak tanımlanmakla birlikte hem yetersiz beslenmeyi hem de obeziteyi ifade etmektedir (Glatt et al., 2020; Murphy-Alford et al., 2020)

Derleme olarak hazırlanan bu makale için literatür taraması; Google Akademik, Dimensions ve Pubmed veri tabanlarındaki farklı çalışmalar taranarak yapılmıştır. Kohort çalışmaları, insan çalışmaları üzerinde hazırlanan meta-analizler ve retrospektif çalışmalar da dahil olmak üzere birçok türde kaynaktan kanserli çocuklarda malnütrisyona sebep olan etmenler, konuyla ilişkili yapılan araştırmalarda kabul görmüş mevcut bilgilerin yer aldığı 32 makale derlemeye dahil edilmiştir.

2 Kanserli Çocukta Malnütrisyon Gelişmesinde Rol Oynayan Faktörler

Yapılan çalışmalarda kanserli çocuklarda malnütrisyona sebep olan etmenler incelenmiştir. Tablo 1'de bu etmenler verilmiştir (Teixeira et al., 2021).

Tablo 1: *Kanserli çocuklarda malnütrisyon nedenleri* (Teixeira et al., 2021)

1. Kemoterapi	**2. Radyoterapi**
İshal Ağrı Mukozit Tat alma duyusu bozukluğu Bulantı Kusma	İshal Bulantı Kusma Tat değişiklikleri Malabsorbsiyonlar
3. Cerrahi Müdahaleye Bağlı Nedenler	**4. Depresyon ve Diğer Psikolojik Faktörler**
Mukozit Diyet kısıtlamaları Ağrı Bozulmuş Gastrointestinal sistem bütünlüğü	Kişilerarası ilişkilerde bozulma Anoreksi Ebeveyn bilgisi eksikliği Yetersiz beslenme Ekonomik dezavantaj
5. Metabolik Değişiklikler	**6. Enerji Gereksinimin Artması**
Tat bozuklukları Anoreksi Malabsorbsiyonlar	Katabolik etki Hipermetabolizma
7. Tümöre Bağlı Nedenler	
Ağrı Gastrointestinal ülserasyonlar İshal Malabsorbsiyonlar Hipermetabolizma	

2.1 Kemoterapi

Kemoterapi alan kanserli çocuklar, tedavinin etkisiyle de birlikte çeşitli sebeplerden dolayı yetersiz beslenme ile karşı karşıya kalmaktadır. Bu çocuklarda başta saç dökülmesi, ağrı ve enerji eksikliği semptomlarıyla birlikte kusma, ishal, ağız yaraları, iştahsızlık, yutma güçlüğü, kabızlık, kuru ağız ve mide bulantısı gibi gastrointestinal semptomlar da yüksek oranlarda görülmektedir (Özalp Gerçeker et al., 2022).

Kanserli çocuklara uygulanan kemoterapi tedavisi türü çeşitli spesifik yan etkilere neden olabilmektedir. Terapötik protokolde ortaya çıkan tedavilerin kombinasyonu, iştahı ve oral alımı azaltarak veya bulantı ve kusmayı indükleyerek beslenme durumunu doğrudan etkilemektedir. Bu durum, sıvı kaybı, elektrolitlerin dengesizliği ve proteinlerin, makro ve mikro besinlerin eksikliğine sebep olabilmektedir. Ayrıca kemoterapinin sitotoksik etkileri arasında ağız boşluğu ve gastrointestinal sistem mukozasını etkileyebilen mukozit de ağrılı olup, oral alım ve ağız hijyenini tehlikeye atarak lokal ve sistemik enfeksiyon riskini artırmaktadır (Pedretti et al., 2023). Özalp ve arkadaşları tedavi süresinin uzamasının, etkili olan semptomlarla beslenme sorunlarının daha çok yaşandığı sonucuna ulaşmışlardır (Özalp Gerçeker et al., 2022). Yapılan bir başka çalışmada, kemoterapi tedavisi sonucu çocukların beslenme durumları ve vücut kompozisyonlarında negatif yönde ilerlemeler olduğu sonucuna ulaşılmıştır (Behling et al., 2020).

Kemoterapi tedavisi sonucunda oluşan kemoterapi toksisitesine bağlı kusma, ishal, malabsorpsiyon, mukozal hasar ve gastrointestinal enfeksiyonlar gibi yaygın problemler enerji kaybının artmasına neden olabilmektedir. Ek olarak kemoterapi ilaçlarının yan etkisi olarak görülen tat almada değişiklikler, iştah kaybı, bulantı ve kusma, besin alımının azalmasıyla birlikte malnütrisyon gelişmesine neden olabilmektedir (Triarico et al., 2019).

2.2 Radyoterapi

Baş ve boyuna veya yemek borusuna uygulanan radyoterapi, % 80'e varan oranda mukozite, gıda alımının azalmasına ve kilo kaybına neden olmakla birlikte, pelvik bölgenin radyoterapi tedavisinde yüksek oranlarda gastrointestinal semptomların yaşandığı görülmektedir (Muscaritoli et al., 2021).

Farklı tümör türlerine sahip olan çocuklara yapılan radyoterapi tedavisi sonrasında çocuklarda görülen bulantı, kusma, ishal ve şiddetli mukozit problemleri çocuklarda yetersiz beslenme sonucu kilo kayıplarına ve gerekli enerji ve protein ihtiyacını karşılayamama durumları ile sonuçlanmıştır (Viani et al., 2020). Bu sebeplerden ötürü radyasyon uygulanan tüm çocuk hastalara kapsamlı bir beslenme değerlendirmesi, yeterli beslenme danışmanlığı ve gerekirse semptomlara ve beslenme durumuna göre beslenme desteği verilmesi gerektiği kılavuzlarca belirlenmiştir (Muscaritoli et al., 2021).

2.3 Cerrahi Müdahaleye Bağlı Nedenler

Malnütrisyon, beslenme yetersizliği, besin metabolizması bozukluğu veya beslenme fazlalığından kaynaklanan bozuklukları içeren, hastaneye kabul edilen kanserli çocukların çoğunda yaygın görülen bir sorundur. Tüm bunlara ek olarak çocuk kanser cerrahisi prosedürlerinde bulantı, ağız kuruluğu, boğaz ağrısı, uyuşukluk, nefes darlığı ve kusma şeklinde şikayetlere neden olabilen anesteziler kullanılmakta ve bu durum da malnütrisyon şiddetini artırabilmektedir. Cerrahi müdahale sonrası kanserli çocuklarda malnütrisyon; gelişememe, kilo kayıpları ve deri altı yağ kaybı ile kendini göstermektedir (Sutisna, 2022).

Farklı özellikle pankreas tümörü olan kanserli çocukların takip edildiği bir çalışmada, cerrahi müdahaleden 6 ay sonra hastaların % 25 ekzokrin yetmezlik, cerrahi müdahaleden 8-10 yıl sonra ise hastaların %12,5' inde endokrin yetmezlik oluştuğu saptanmıştır. Takip döneminde hastaların % 50' sinde D vitamini yetersizliği saptanmakla birlikte, tüm hastalarda A, E vitaminlerinin normal sınırlarda seyrettiği sonucuna ulaşılmıştır. Bu çalışma sonucunda pankreas rezeksiyonları, pankreas endokrin ve ekzokrin fonksiyonlarının bozulmasına neden olabilir yargısına ulaşılmıştır (Bolasco et al., 2021).

2.4 Depresyon ve Diğer Psikolojik Faktörler

Depresyon, kanserli çocuklarda sık görülen bir psikiyatrik bozukluktur. Uygulanan tedavinin yan etkileri sebebiyle ve normallik hissinin kaybından da kaynaklanabilmektedir (Cano-Vázquez et al., 2022). Kanserli çocuklarda tedavi sürecinin sağlıklı yaşam üzerine etkisinin incelendiği bir çalışma sonunda, hastanedeki tedavi sürecinin çocuklar için şimdiye kadarki en kötü seçenek olabileceği ve evde tedavinin, çocuk hastalarda genel refahı ve yaşam kalitesini artırmaya yönelik en başarılı müdahaleler arasında olduğu kanıtlanmıştır (Saleh et al., 2023).

Kanserli çocuklarda tedavi esnasında, tedavi sonrasında ve bazen hasta remisyona girdikten sonra artan yorgunluk etkileri sebebiyle yaşam kalitesi düşmektedir (Franke et al., 2022). Yapılan bir çalışma, kanserli çocuklarda geleceğe yönelik belirsizlik duygusu ve hastalığın tekrarlama korkusunun, çalışma süresince sağ kalanlar arasında anksiyete ve depresyon duygularını şiddetlendirerek psikolojik yaşam kalitesinde düşüklüğe sebep olduğu saptanmıştır (Di Giuseppe et al., 2020).

Kanserli çocuklarda görülen ağrı, mide rahatsızlıkları, ishal bulantı tedaviye yönelik uygulanan prosedürlerin yayın görülen yan etkilerine ek, depresyon ve anoreksi olmak üzere psikolojik etkiler de iştah üzerinde olumsuz bir etkiye sahip olarak enerji ve besin alımında ciddi düşüşlere sebebiyet vermektedir. Yapılan bir çalışmada tedavi gören kanserli çocukların %40'ında tüm bu sebeplerden ötürü önemli miktarda protein ve enerji bakımından yetersiz beslenmesine sahip oldukları saptanmıştır (Gallo et al., 2022).

2.5 Metabolik Değişiklikler

Kemoterapi, radyasyon, cerrahi ve immünoterapi tedavi yöntemleri doğrudan bulantı, kusma ile dolaysıyla anoreksiya veya yetersiz beslenmeyle daha da ciddi bir tabloyla kilo veya kas kaybı gibi diğer metabolik değişikliklere sebebiyet vererek yaşam kalitesi üzerinde zararlı etkilere yol açabilmektedir (Franke et al., 2022). Kanserli çocuklarda görülen bulantı, kusma ve iştah kaybı besin alımını etkileyen en önemli yan etkilerdendir. Tedavi süresince görülen tat değişikliklerinin, %60,3 oranında üçüncü en yaygın rahatsız edici semptom olduğu saptanmıştır. Bu değişikliklerle birlikte kanserli çocuklarda kötü beslenme, artan enfeksiyonlar, kötü sağkalım ve sağlıkla ilişkili yaşam kalitesinin bozulmasıyla da doğrudan ilişkilidir (van den Brink et al., 2021).

Kanserli çocuklarda tat koku değişikliklerinin incelendiği bir çalışmada kemoterapiye başladıktan yalnızca 6 ay sonra tat – koku değişikliği sonucu iştah kaybı etkisiyle büyük bir kilo kaybının ortaya çıktığı saptanmıştır. Çalışma sonucunda tat alma değişiklikleri iştah kaybı, yorgunluk ve kötü bilişsel işlevlerle ilişkilendirilmiştir (Grain et al., 2023).

Kanserli çocuklarda yapılan bir vaka kontrol çalışmasında tat testi, 2 kemoterapi döngüsü arasında yapılmış ve hastalar arasında acı tat için daha yüksek eşik değerleri ortaya çıktığı saptanmıştır. Ve ayrıca bu çalışmada hastaların kontrollere kıyasla daha fazla tat tanıma hatası yaptığı gözlenmiştir. Bu metabolik değişiklikler kanserli çocuklarda yaşam kalitesini olumsuz etkilemekle birlikte kısa ve uzun vadede değişen beslenme alışkanlıklarının kontrolü ve yönetilebilmesi için tat değişikliği takibi büyük önem arz etmektedir (van den Brink et al., 2021).

Kanserli çocuklarda görülen yetersiz beslenme ve obezitenin etiyoloji çok faktörlüdür. En yüksek malnütrisyon riskine sahip olan hastalar ileri evre hastalığı olan ve yoğun tedavi gören hastalardır. Gastrointestinal sistemin radyasyona tabi tutulması, büyük karın ameliyatı, kemik iliği nakli ve kortikosteroid yokluğunda sık kemoterapi malnütrisyon riskini arttırdığı bildirilen tedavi yöntemleridir. Ayrıca kortikosteroidler, yüksek doz kraniyal radyoterapi, kapsamlı beyin cerrahisi ve tüm vücut veya abdominal radyoterapi de yağlanma riskini artıran tedaviler arasındadır (Aarnivala et al., 2020).

Kanserli çocuklarda sıkça görülen iştah, kilo ve iskelet kası kaybı ile karakterize olan kaşeksi; hastanın sosyoekonomik durumu ve kullanılan tedavi ile ilgili olabilmekte ve yorgunluk, fonksiyonel bozukluk, tedaviye bağlı toksisitenin artması, kötü yaşam kalitesi ve hayatta kalma süresinin azalması gibi sonuçlara sebebiyet veren çok yönlü bir sendromdur (Roeland et al., 2020).

2.6 Enerji Gereksinimin Artması

Çocukluk çağındaki normal büyüme, vücut yüzey alanının, vücut kompozisyonunun ve terapötik ajanların metabolizmasının değişmesine sebep olmaktadır. Çocuklar büyümeye devam ettiğinden, yaşa ve boya dayalı değerlendirmeler ve normalleştirilmiş ölçümler (standartlaştırılmış *Z* puanları), zaman içinde beslenme durumunun değerlendirilmesi ve izlenmesinde çok daha doğrudur (Runco et al., 2021).

Kanserli çocuklarda artan ihtiyaçlar ve enerji kayıplarının yanı sıra mikro ve makro besin maddelerinin alımının azalması da malnütrisyon gelişimiyle ilişkilidir. Pro-enflamatuar sitokinler metabolik hızı ve katabolik dürtüyü artırarak mobilizasyonu, enerji substratlarının oksidasyonunu ve tüm vücut proteinlerinin kaybını artırmaktadır. Tüm bunlara ek kusma, diyare, malabsorpsiyon, mukozal hasar, gastrointestinal enfeksiyonlar gibi kemoterapinin bağlı toksisitesine bağlı olarak gelişen ve yaygın gastrointestinal bozukluklar da enerji kayıplarının artmasına sebep olmaktadır. Kemoterapi sonucunda görülen tat ve koku değişikliği, iştah kayıpları birlikte kusmaya neden olarak besin alımının azalması da malnütrisyona yol açabilmektedir. Tüm bu negatif süreçler yalnızca beslenme tedavisi ile düzeltilemeyip; iskelet kası kütlesinde devamlı bir kayıpla karakterize olan kanser kaşeksisine yol açarak, kilo kaybı veya büyüme geriliği, anoreksi, kas kayıpları, yorgunluk ve anormal biyokimyasal parametrelerle ilerleyici bir fonksiyonel bozukluğa neden olması kaçınılmaz bir süreç haline gelmektedir (Triarico et al., 2019).

2.7 Tümöre Bağlı Nedenler

Kanserli çocuklarda görülen beslenme sorunlarının nedenleri hastanın bulunduğu aşamaya göre değişkenlik göstermektedir; tanı anı, kemoterapi, radyoterapi, cerrahi veya tedavinin tamamlanması aşamaları gibi. Tümöre bağlı olarak gelişen malnütrisyon etiyolojisi de tümörün yerine ve tipine göre değişkenlik göstermektedir. Yapılan çalışmalarda karsinomlar, kemik tümörleri ve lenfomalar gibi bazı histolojik neoplazm tiplerine sahip çocuk hastalarda ağrı, mukozit, kusma, bulantı, disguzi ve disosmi nedeniyle besinlerin yutulması ve emilmesinde zorluklar ortaya çıktığı gözlenmiştir (De Lucena Ferretti et al., 2023a).

Çocuk kanser hastalarında karsinomlar, kemik tümörleri ve lenfomalar malnütrisyon riskini artırarak; hastalarda psikolojik nedenlere ek olarak ağrı, mukozit, kusma, bulantı, tat bozukluğu ve koku algı bozukluğu nedeniyle besinlerin yutulması ve emilmesinde zorluklar ortaya çıkarmaktadır (De Lucena Ferretti et al., 2023b). 18 yaş altı kanserli çocuklarda malnütrisyon prevalansının incelendiği bir çalışmada, beslenme durumu değişikliklerini ve beslenme bozukluklarına etki eden faktörleri incelemek için, katı tümörler ve beyin tümörleri, hematolojik maligniteler tanılı hastalar dahil edilmiştir. Çalışma sonunda yeni tanı alan ve aktif tedavi gören çocukların, özellikle tedavinin ilk üç ayında yetersiz beslenmediği, daha sonraki aşamalarda ise aşırı beslenme riskinin yüksek olduğu sonucuna

ulaşılmıştır. Tedavinin ilk üç ayında yetersiz beslenmeye etki eden en önemli bileşenin ağır tedavi protokolü olduğu saptanmıştır (Diakatou & Vassilakou, 2020a).

Yapılan bir meta analiz çalışması sonucunda belirli kanser türlerine sahip çocuklarda beslenmeyle ilgili sorunlar diğer kanser türlerine göre daha sık görüldüğü saptanmıştır: Tanı anında yetersiz beslenme prevalansı, katı tümörleri olan çocuklarda daha yüksekken lösemi ve lenfomalı çocuklarda ise bu durumun daha az görüldüğü saptanmıştır. Aynı çalışma sonucunda beyin tümörü olan çocuklarda aşırı kilo ve obezite prevalansının yüksek olduğu saptanmıştır (Diakatou & Vassilakou, 2020a).

3 Kanserli Çocuklarda Beslenmenin Önemi

Kanserli çocuklarda beslenme durumunun düzenli ve detaylı değerlendirilmesi, kanser tanısı konulduktan hemen sonra başlanmalı ve tedavisi süresince olduğu gibi yaşam süresinin devam ettiği süreçte de yapılmalıdır. Kanserli çocuklarda beslenme durumunun değerlendirilmesi, normal büyüme ve gelişmeyi yakalamakla birlikte yukarıda belirtilen malnütrisyona sebebiyet verebilecek klinik sonuçları da optimize etmek için değerlendirmenin sürekliliği büyük önem arz etmektedir (Joffe & Ladas, 2020).

Beslenme durumunun değerlendirilmesi için makro ve mikro besin alımını tespit etmek, bilinen/bilinmeyen besin isteksizliklerini, intoleranslarını ve alerjileri belirlemek için diyet geçmişinin incelenmesini içermektedir. Bu değerlendirmelere ek olarak büyüme ve gelişmeyi izlemek için klinik bakım kılavuzları doğrultusunda büyüme eğrileri dikkate alınarak gerekli değerlendirmeler yapılmalıdır (Joffe & Ladas, 2020).

Kanserli çocuklara uygulanan beslenme müdahaleleri, tedavi süreci yöntemi sonucunda doğrudan ve dolaylı olarak gelişebilecek sağlık problemlerinden ötürü, iştah ve diyet alımının saptanması zor olmaktadır. Bu sebepten beslenme müdahalelerinde temel amaç, çocuk gerekli kanser tedavisi alırken normal büyüme ve gelişmeyi sürdürerek teşvik etmek olmalıdır. En uygun müdahale, semptom yönetimini hedef alırken beslenme ihtiyaçlarını da karşılamayı sağlamak olmalıdır (Joffe & Ladas, 2020).

Kanser tanısı alan çocuk hastaların beslenme durumu, hastalığın ilerlemesi ve sağkalım oranlarını belirleyebilir. Tanı aşamasındaki beslenme sorunları, mortalite ve morbidite üzerinde rol oynayabilir. Bunun yanı sıra, beslenme ile ilgili problemler, hayatta kalan bireylerin yaşam kalitesini olumsuz etkileyebilir ve onları diğer kronik hastalıklara açık hale getirebilir. Bu durum, bu hasta grubunun bilimsel bakım ve beslenme desteğine olan ihtiyacını vurgulamaktadır (Diakatou & Vassilakou, 2020b).

4 Sonuç ve Öneriler

Bu makalede kanserli çocuklarda görülen ve uzun vadede malnütrsiyon gelişmesinde rol oynayan faktörler derlenmiştir. Kanserli çocuklara uygulanan ağır kemoterapi, radyoterapi ve/veya cerrahi tedavi protokolleri sırasında ve sonrasında beslenmeyle ilgili sorunların prevalansı yüksektir. Tedavinin türüne göre değişkenlik göstermekle birlikte kanserli çocuklarda yaygın görülen sorunlardan bazıları şu şekildedir; ishal, bağırsak tıkanıklıkları, bulantı, kusma, tat ve koku duyusu bozuklukları, mukozit, malabsorpsiyonlar, anoreksi, kaşeksi, hipermetabolizma, yetersiz ve dengesiz enerji alımı. Hatta bu problemler yalnızca uygulanan tedavinin etkisiyle ortaya çıkmamakta, alışılmış ev ortamından ve sosyal çevreden uzaklaşma gibi etmenlerin de etkisiyle hastanın değişen psikolojik durumu sonucunda da görülebilmektedir. Ve tüm bu etkilere maruz kalan kanserli çocuklarda malnütrisyon sık görülen bir klinik tablodur. Tedavi edilemeyen malnütrisyon kanserli çocuğun bağışıklık sistemi zayıflatarak, iyileşme sürecini uzatıp genel sağlık durumunu olumsuz etkileyecektir. Hastaların beslenme

durumlarının takibi ve sorunların erken teşhisi sürecin sağlıklı yönetimi açısından büyük önem arz etmektedir. İlk tanıdan itibaren, tedavi sırasında, sonrasında ve hatta hasta reminasyon sürecine girdiğinde dahi hastanın beslenme durumunun ve genel sağlık düzeyinin değerlendirilmesi zorunlu olmalıdır. Bu değerlendirme sonuçları doğrultusunda hastaya kanserin türüne, kanser hücrelerinin veya tümörünün bulunduğu konuma ve boyutuna, teşhis anındaki beslenme durumuna, uygulanan tedavi protokolüne, hastanın yaşına ve cinsiyetine göre yürütülen ve ulusal geçerliliği olan rehberler doğrultusunda uygun beslenme tedavisi uygulanmalıdır. Uygulanan bu beslenme tedavisi hastayı iyileştirmekle kalmayıp aynı zamanda hastanın yaşam kalitesini de artırarak, kanserli çocuklarda yaygın görülen mortalite ve morbidite oranlarını da düşürecektir. Hastanın tanı anından itibaren tüm süreçler alanında uzmanlardan oluşan ekipler tarafından takip edilmeli ve yönetilmelidir. Yalnızca hastanede geçen tedavi süresince değil evde tedavi süresinin sağlıklı yönetilebilmesi için başta hastanın ebeveynleri olmak üzere tüm aile bireyleri, hastanın doğru beslenmesi ve psikolojik durumunun iyi yönde desteklenmesi amacıyla uzmanlarca eğitilmelidir.

5 Beyanname

5.1 Teşekkür

Bu araştırma için, yazarlar dışında katkı yapan kişi veya kurum bulunmamaktadır.

5.2 Finansman Kaynağı

Bu araştırma için herhangi bir finansal destek alınmamıştır.

5.3 Çıkar Çatışması

Bu çalışmada herhangi bir çıkar çatışması yoktur.

5.4 Yazarın Katkıları

Rumeysa Sultan Çevik: Fikir geliştirme, literatür taraması, derlemenin yazımı, düzeltmelerin yazımı, dergiye gönderme, süreç ve yazışmaları yürütme.

6 İnsan ve Hayvanlarla İlgili Çalışma

6.1 Etik Onay

Bu çalışma bir derleme makalesi olduğu için herhangi bir etik kurul onayına gerek yoktur.

6.2 Bilgilendirilmiş Onam

Bu çalışma bir derleme makalesi olduğu için herhangi bir bilgilendirilmiş onama gerek yoktur.

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