

Araştırma Makalesi / Research Article

**Göğüs Cerrahisi Geçiren Akciğer Kanseri Hastalarının Ameliyat Öncesi Deneyimleri ve Gereksinimleri: Niteliksel Bir Çalışma**Sema Nur YAMAN ÇELİK^{1*} | Aylin Durmaz EDEER²**Preoperative Experiences and Needs of Patients with Lung Cancer Undergoing Thoracic Surgery: A Qualitative Study****ÖZET**

Kanser hastalarının ameliyat öncesi ihtiyaçlarının belirlenmesi ve bu doğrultuda bilgilendirilmesi önemlidir. Bu fenomenolojik nitel çalışma, akciğer kanseri nedeniyle torasik cerrahi geçiren hastaların ameliyat öncesi deneyimlerini ve ihtiyaçlarını tanımlamak amacıyla yürütülmüştür. Araştırma nitel tasarımda yürütülmüştür. Türkiye, İzmir'deki bir üniversite hastanesinde akciğer kanseri nedeniyle ameliyat olan hastalarla görüşme yapılmıştır. 12 hastayla görüşülmüştür. Hastalarla yapılan görüşme ortalama 20 dakika sürmüştür. Çalışmamızda ölçüt örnekleme deseni kullanılmıştır. Hastaların sosyodemografik özelliklerini belirlemek için hasta tanıtım formu, ameliyat öncesi deneyimlerini ve ihtiyaçlarını belirlemek için ise üç sorudan oluşan yarı yapılandırılmış görüşme formu kullanılmıştır. Hastaların tamamı ameliyat öncesi dönemde ameliyat hakkında bilgiye ihtiyaç duyduklarını belirtmişlerdir. Hastalarla yapılan görüşmeler sonucunda iki ana temaya ulaşılmıştır. Temalar, hastaların ameliyat kararı alırken yaşadıkları duygular ve ameliyat öncesi ihtiyaçlardır. Sadece ameliyat öncesi ihtiyaçlar teması altında iki kategori oluşturulmuştur. Alt kategoriler ameliyat öncesi bilgi gereksinimleri ve ameliyat öncesi psikolojik destek gereksinimleriydi. Akciğer kanseri nedeniyle torasik cerrahi geçiren hastaların ameliyat öncesi dönemde kansere bağlı ölüm korkusu, çaresizlik, kaygı ve öfke gibi olumsuz duygular yaşadıkları, hastaların ameliyat öncesi dönemde bilgi ve psikolojik desteğe ihtiyaç duydukları ve bu ihtiyaçlarının karşılanmadığı tespit edilmiştir. Akciğer kanseri nedeniyle ameliyat olacak hastalar için ameliyat öncesi dönemde hasta eğitimi ve destek programlarının oluşturulmasına ihtiyaç vardır. Bu çalışmanın sonuçları hasta eğitimi ve destek programlarına rehberlik edebilir.


Anahtar kelimeler: Akciğer kanseri, Ameliyat öncesi bakım, Fenomonolojik çalışma, Hasta eğitimi, Kanser hastalarının ihtiyaçları, Torasik cerrahi

ABSTRACT

Identifying the preoperative needs of cancer patients and providing them with information accordingly is important. This phenomenological, qualitative study was conducted to describe the preoperative experiences and needs of patients undergoing thoracic surgery for lung cancer. The research employed a qualitative design. Patients who underwent lung cancer surgery were interviewed at a university hospital in Izmir, Turkey. Twelve patients were interviewed. The interviews lasted an average of 20 minutes. A criterion sampling design was used in our study. A patient introduction form was used to determine the patients' sociodemographic characteristics, and a three-question semi-structured interview form was used to determine their preoperative experiences and needs. All patients indicated that they needed information about surgery in the preoperative period. Two main themes emerged from the patient interviews: the emotions experienced by patients when making the decision to undergo surgery and their preoperative needs. Two categories were created under the theme of preoperative needs. The subcategories were preoperative information needs and preoperative psychological support needs. It has been determined that patients undergoing thoracic surgery for lung cancer experience negative emotions such as fear of cancer-related death, helplessness, anxiety, and anger in the preoperative period. Patients need information and psychological support in the preoperative period, and these needs are not being met. There is a need to develop preoperative patient education and support programs for patients undergoing lung cancer surgery. The results of this study can guide patient education and support programs.

Keywords: Lung cancer, Preoperative care, Phenomonological design, Patient education, Needs of cancer patients, Thoracic surgery

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INTRODUCTION

Having an operation or any surgical intervention are events of great importance in people's lives. The stress experienced due to surgical intervention has physiological and psychological effects (1). This situation affects the well-being of patients. The preoperative period is worrisome for most patients and causes anxiety (2,3). In the preoperative period, patients face various situations that trigger anxiety (4).

Patients have difficulty understanding the surgery and its consequences and the process. Therefore, patients need clear information about the disease, treatment approaches, physical and emotional changes resulting from treatment to improve their quality of life (5). Clarifying the unknown, explaining surgical and anesthetic procedures in detail, allowing the patient to be a potentially active participant in the recovery process, accelerates the patient's postoperative recovery and discharge (6). The information given to cancer patients about their disease and treatment can change the symptoms, problems and the way the patient copes with the disease and its treatment (7). In this direction, it is important to determine the preoperative needs of the patients and to inform them according to their needs. In a study conducted by Çullu and Ülker (2020), the majority of patients in the preoperative period reported that the information provided did not meet their needs. (8). In order to provide patients with the education they need, it is important to determine preoperative needs based on the preoperative experiences of patients who have undergone surgery.

WHO recommends that the patient should be at the center of clinical decisions on the basis of person-centered care (9) and health professionals should provide the information requested by the patient to enable patients to make informed decisions (10). When the literature was examined, no study was found on the preoperative information needs and preoperative experiences of patients who underwent thoracic surgery for lung cancer. There is a need to determine the information needs of patients in the preoperative period and to determine the needs they experience. It

was conducted to understand the preoperative experiences of patients undergoing thoracic surgery for lung cancer.

MATERIALS AND METHODS

Design: The research was conducted qualitative design. The study adopted a phenomenological qualitative design. Phenomenological design focuses on how the meanings that people, societies, or communities derive from their experiences are common and the meaning that remains in people (11).

Place of the Study: The study was conducted in the thoracic surgery service of a university hospital in İzmir between January 10 and March 10, 2023.

Population and Sample of the Study: A criterion sampling design, one of the purposive sampling methods, was used in our study. Purposive sampling involves the identification and selection of individuals or groups who are knowledgeable and experienced about the topic of interest (12).

Patients who underwent surgery for lung cancer in the thoracic surgery department of a university hospital in Izmir, Turkey, were interviewed. Several opinions exist on determining the number of participants in qualitative approaches. Some argue that interviews should continue until data saturation is reached, which means that no new information is gathered (13,14). We stopped interviewing patients when the data reached the saturation point. Saturation was determined at the 10th interview, but the 11th and 12th interviews were conducted to ensure saturation. We conducted interviews with 12 patients.

The purpose of the study was explained to the patients who agreed to participate in the study were interviewed. Patients over 18 years of age, who underwent surgery for lung cancer, who had no hearing or vision problems, who had person, place and time orientation, and who could speak, understand

and write Turkish were interviewed. Patients who underwent reoperation or developed complications such as postoperative bleeding were not interviewed.

Data Collection

Individual interviews were conducted with the patients. Individual interviews were conducted in the nurse interview room in the thoracic surgery clinic. The interview room was a quiet, well-lit, heated and ventilated room with the necessary equipment for the patients to feel comfortable. A warning sign was hung on the door to avoid interrupting the interviews. Before starting the interview, the purpose of the study and the use of a voice recorder during the interview were explained and the patient's permission and consent were obtained. The interview with the patients lasted an average of 20 minutes.

Data Collection Tools

A patient identifying information form was used to determine the sociodemographic characteristics of the patients, and a semi-structured interview form consisting of three questions was used to determine the preoperative experiences and needs of the patients. In-depth individual interviews were conducted to determine the preoperative experiences and needs of the patients. The researcher collected the data by recording with a voice recorder and taking notes during the interview. Verbal and written consent was obtained from the patients.

Patient Identifying Information Form (Appendix 1.)

It is a form that includes questions about the patients' age, gender, educational status, employment status, and information needs regarding the surgery. This form was created based on the literature (15,16). This form was used for the sociodemographic data of the patients before the interview.

Semi-structured Interview Form (Appendix 2.)

The semi-structured interview form consisted of 3 questions. The interviewer conducted individual interviews using the prepared questions.

During the interview process; the researcher asked the questions prepared in advance and also asked additional questions to get detailed information. In individual and in-depth interviews, the interviewer was able to change the sentence structure and order of the questions during the interview. He could deepen the points he found important (17).

Interview questions

Main interview question: What did you need in the pre-operative period?

Interview sub-questions

- 1) How did you feel when you found out you were going to have surgery?
- 2) How did you spend the period until hospitalization/operation?

Ethical Disclosures

Before starting the research, ethical approval was obtained from the Dokuz Eylül University Faculty of Health Sciences Ethics Committee (dated November 23, 2022, numbered 2022/37-20). Verbal and written consent was obtained from the patients. The research was conducted in accordance with the Declaration of Helsinki Principles.

Data Analysis

We used to content analysis to analyze the data. In the content analysis, the data obtained through interviews and observations were analyzed in four stages: (a) coding the data, (b) finding codes, categories and themes, (c) arranging the codes, categories and themes, (d) description and interpretation of findings

(17). The information obtained from the interview was transferred to the computer by the researcher and the listened expressions were converted into text. Simple coding was done for the transferred data, and themes appropriate to the codes obtained through the coding process were determined and content analysis was performed. In content analysis, inductive analysis, i.e. content analysis based on coding, was used. In this analysis, similar data were classified and interpreted under certain concepts and themes (17).

Rigor of study

To establish the rigor of this study, credibility, dependability, confirmability, and transferability were employed (18). For the reliability and credibility of the data analysis, the patients' statements were coded independently by two researchers. Each researcher who analyzed the data independently created a code list and theme and then the analyses were compared. Additionally, an expert who was not involved in this study but had experience working with these patients was asked for their opinion on the themes. This was done to ensure the confirmability of the data. The principal investigator in the study has experience in qualitative research, and the other investigator has received training in qualitative research. There were no prior relationships with participants.

Results

Ten patients were interviewed to determine the preoperative experiences and needs of patients who undergoing surgery for lung cancer. Three of the patients were female (25%) and nine were male (75%). 75% (n:9) of the patients were aged 50-64 years and 25% (n:3) were 65 years and older. 33.3% (n:4) of the patients were primary school graduates and 66.7% were high school and university graduates. 58.3% (n:7) of the patients were retired. In the interviews with the patients, the majority of the patients (n:7) stated that their information needs for surgery were met by the doctor, while the other patients (n:5) stated that their

information needs for surgery were met by the doctor and the internet. Despite this, all of the patients stated that they needed information about the operation in the preoperative period (Table 1).

Table 1. The descriptive features of the patients

	n	%	n	%		
Gender	Female	3	25	Male	9	75
Age	50-64 age	9	75	65 and over	3	25
Educational Status	Primary school	4	33.3	High school and university	8	66.7
Where they got information about surgery	Doctor	7	58.3	Internet and doctor	5	41.6

As a result of the interviews with the patients, two main themes were reached. The themes were formed as the emotions experienced by the patients when the decision for surgery was made and preoperative needs. Two categories were formed only under the theme of preoperative needs. The subcategories were preoperative information needs and preoperative psychological support needs (Figure 1).

Theme 1: Emotions Experienced by Patients When the Decision for Surgery was Made

Patients reported generally experiencing negative emotions when they learned that they needed surgery for a mass in their lungs. Patients reported feelings of 'fear of death, helplessness, anxiety, anger/anger, sadness, confusion'.

P5: I didn't expect to have surgery, I thought it was something that would be taken care of with chemotherapy. I was sad. (Age 67, Male)

P8: I was very surprised. I didn't expect surgery. I expected to be treated with medication. (Age 79, Male)

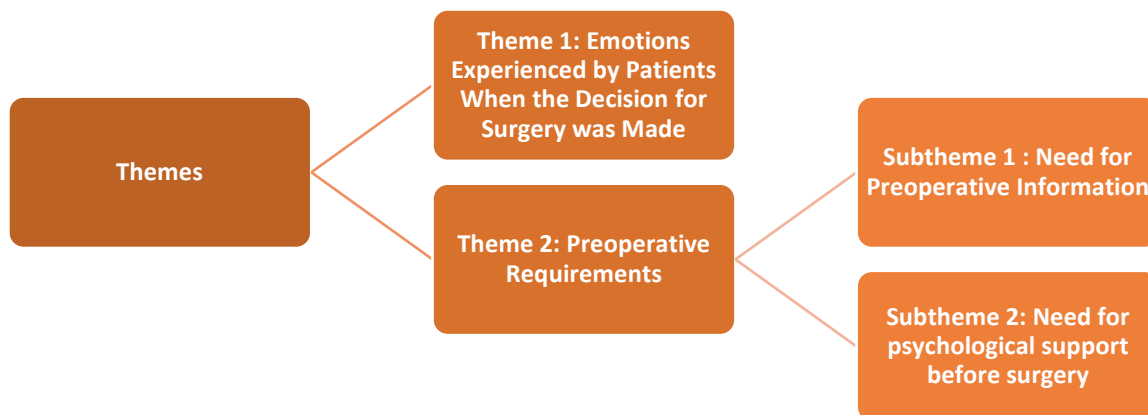


Figure 1. Themes

P10: I was scared. I was scared because of cancer. (Age 64, Male)

P11: Because I knew it was because of smoking. I was angry with myself. (Age 56, Female)

P12: I am sad. It is not something that everyone has. I mean, it is the lottery, but it is a bad lottery. (Age 66, Male)

Theme 2: Preoperative Requirements

Subtheme 1 : Need for Preoperative Information

Some patients said that it would be useful to be informed about preoperative preparation for surgery (especially skin preparation), postoperative breathing exercises and the presence of a chest tube in the preoperative period.

P1: They tell us to cough after the surgery. No one explains why we should cough, I would have done it more easily if I knew before. (Age 55, Male)

P2: We tried three times for one shave (hair removal). If they had told us how to do it before the surgery, we

would have done our hair removal properly. (Age 58, Male)

P3: There is that blowing device (patient shows the incentive spirometer), it would be good if how to use it was taught before surgery. (Age 64, Male)

P5: I never thought I would face such a big event (patient points to chest tubes). These (pointing to the chest tubes) were difficult for me after the surgery. If I had been informed about these tubes, I would have been more comfortable. (Age 67, Male)

P10: After the surgery, the nurse showed me the leg movements I should do in bed before getting out of bed. She told me to be careful with the tubes. If I had known before, I would not have had difficulties. (Age 64, Male)

Subtheme 2: Need for psychological support before surgery

Some patients indicated that it would be helpful to receive psychological support in the pre-operative period to aid recovery.

P4: Actually, the most important thing is that a psychologist should meet with cancer patients like me before the surgery. Morale is very important (Age 58, Male)

P7: People are busy with thoughts about their diagnosis, sometimes our energy drops a lot. Therapy can help to get away from worries and anxieties, psychological support is needed to prepare people for this process, apart from physical things. (Age 51, Female)

DISCUSSION

The results of this study revealed the preoperative experiences and needs of patients undergoing thoracic surgery for lung cancer.

In our study, all patients stated that they needed information about the surgery in the preoperative period. In a qualitative study evaluating the information needs of patients who underwent surgical resection for lung cancer; some of the patients stated that they or their family members searched for information on the internet both in the preoperative and postoperative period (19). In a qualitative study conducted for cancer patients; patients stated that it would be good to be provided with information before surgery, and that they preferred to receive this information online or verbally face-to-face (20). Since a new situation arises with the diagnosis of cancer for patients, patients are expected to need information. Moreover, the addition of surgery to the cancer process will cause the patient's needs to increase. It is a part of nursing care for nurses to provide necessary information to patients. All of the interviewed patients stated that they met their information needs for surgery from both the doctor and the internet. It should be noted that patients did not mention nurses as a source of information before surgery. Nurses are not involved in preoperative outpatient clinic services. Patients are admitted to the clinic one or two days before surgery. Preoperative education may not have been given effectively during this period. Therefore,

the preoperative education needs of the patients may not have been met.

When the decision to undergo surgery for lung cancer was made, patients stated that they experienced the emotions of fear of death, helplessness, anxiety, anger/anger, sadness, and confusion. In a study examining the emotions of cancer patients, it was stated that patients experienced the most fear and anxiety about cancer (21). It was found that patients with lung cancer experienced symptoms such as fatigue, distress and sadness in the process (22). In another study, cancer patients stated that they experienced psychosocial problems such as anger, problems related to appearance, hopelessness and insomnia during the treatment phase (16). In another study examining the unspoken thoughts and feelings of patients before surgery, the majority were found to experience significant preoperative anxiety. This anxiety was often associated with fears of death, abandonment, and disruption of body integrity. (8). Treatments for cancer negatively affect the quality of life of the patient and his/her family. Therefore, patients and their families may show complex emotional reactions during the treatment process and at every stage of the disease. In addition, the interrupted plans and roles of the patients cause the individual to experience a sense of inhibition, anxiety, worry and uncertainty. These reasons may have caused patients who will undergo surgery for lung cancer to experience negative emotions.

In the preoperative information needs category of the preoperative information needs theme, patients stated that it would be useful to provide information on preoperative skin preparation, deep breathing and coughing exercises, use of an incentive spirometer, foot and leg exercises, and the presence of a chest tube and movement with the chest tube. In a qualitative study investigating what is most important for patients diagnosed with cancer, patients stated that they wanted information about the type of cancer, information about surgery, and information about cancer-related treatments (chemotherapy and radiotherapy) (20). In a qualitative study conducted to

determine what information patients who underwent surgical resection for lung cancer wanted to learn before surgery, patients stated that they wanted information about the operation process, how to perform breathing exercises, and the presence and management of pain after surgery (19). In a study on the thoughts and wishes of patients in surgical clinics that they did not express before surgery; patients stated that they needed information about the surgery performed, the operating room and its environment, postoperative status, complications and postoperative pain (8). Educating patients about preoperative preparation has potential benefits on physical and psychological outcomes and is critical for surgical recovery (23). Patients interviewed in our study reported that they received information from doctors and the internet before surgery. Patients who were to undergo surgery were informed about preoperative preparation. However, there were deficiencies in the education of the patients due to differences in the content of the preoperative education, the method of education, the frequency of education, the time of education and the priorities of the patients. The information needs of the patients were not met with the education provided. It is important that nurses take part in the preoperative education of patients in the role of educators. The education process given to patients by nurses in the preoperative period should be structured.

In the preoperative psychological support need category of the preoperative information need theme, some of the patients stated that they needed psychological support in the preoperative period. Having lung cancer can evoke a sense of death, organ loss due to treatment, a heavy financial burden and very long treatment processes (24). In a qualitative study on psychosocial problems experienced by cancer patients, patients stated that they needed psychosocial support (16). In another study, it was found that patients who underwent surgical resection for lung cancer treatment experienced psychosocial symptoms (25). Cancer is a serious disease that brings with it significant psychological problems as well as negative effects on people's physical health. Patients and their

families need support to improve their quality of life during the cancer diagnosis and treatment process. It has been stated that emotional problems experienced by lung cancer patients are an important issue and that screening of emotional problems that start at the time of diagnosis, the need for psychosocial attention and psychiatric diagnostic interviews should be performed (24). Cancer patients with psychological distress have poor adherence to treatment, and providing psychological support before surgery has the potential to improve psychological health and outcomes (26). Preoperative psychologist-led interviews with cancer patients have been shown to have a positive effect on the outcomes of psychological symptoms (anxiety, depression, distress), cancer-specific symptoms, physical functioning, and fatigue (27,28). In this direction, it is important that patients who will undergo surgery due to cancer receive psychological care in the preoperative period due to the negative emotions experienced by patients who will undergo surgery due to lung cancer and their desire for psychological support.

CONCLUSION

It has been determined that patients undergoing thoracic surgery for lung cancer experience negative emotions such as fear of death, helplessness, anxiety, and anger in the preoperative period. They need informational and psychological support, but these needs are not adequately met. Based on these findings, it is crucial for nurses to provide physical, emotional, and informational support to patients in the preoperative period with a holistic approach. Structured education and counseling programs conducted by nurses are believed to facilitate patient preparation for the surgery, reduce anxiety levels, and enhance emotional well-being. Furthermore, nurses' effective communication with patients, empathy, and provision of psychosocial support tailored to individual needs can strengthen patient confidence and compliance with the surgical process.

Limitations

The fact that the study was conducted solely in the thoracic surgery department of a university hospital in Izmir may have prevented the study from reflecting patient experiences across different institutions or regions. The entire study group consisted of patients who had undergone surgery for lung cancer. Patients may have difficulty remembering their experiences and feelings during the preoperative period. Patients' experiences may have been affected by the forgetting factor.

REFERENCES

- 1) Doğu, Ö. (2013). Meeting the needs of education and training in patients with planned surgery preparation psychological effects of individual patient-sakarya sample. *Journal of Düzce University Health Sciences Institute*, 3(3): 10-13.
- 2) Fernández, MTM. (2018). Influence of the presurgical nursing visit on the patients' anxiety. *Nuberos Científica*, 1, 34–38.
- 3) Mulugeta, H., Ayana, M., Sintayehu, M., Desie, G., Zewdu, T. (2018). Preoperative anxiety and associated factors among adult surgical patients in Debre Markos and Felege Hiwot referral hospitals, Northwest Ethiopia. *BMC Anesthesiology*, 18(1): 155. <https://doi.org/10.1186/s12871-018-0619-0>
- 4) Alanazi, AA. (2014). Reducing anxiety in preoperative patients: a systematic review. *Br J Nurs*, 23(7):387-393. doi: 10.12968/bjon.2014.23.7.387
- 5) Silva, DGF., Souza, ALLP., Martins, DCF., Pedrosa TM., Muzi, CD., Guimaeres RM. (2017). Quality of information given to surgical patients with abdominal cancer. *Invest. educ. Enferm*, 35(2):221-231. doi: 10.17533/udea.iee.v35n2a11
- 6) Refai, M., Andolfi M., Gentili, P., Pelusi, G., Manzotti, F., Sabbatini A. (2018). Enhanced recovery after thoracic surgery: patient information and care-plans. *J Thorac Dis*,10(4): 512–5516. doi: 10.21037/jtd.2017.12.87
- 7) Arraras, JI., Greimel, E., Sezer, O. et al. (2010). An international validation study of the EORTC QLQ-INFO25 questionnaire: an instrument to assess the information given to cancer patients. *Eur. J. Cancer*, 46(15):2726-38. doi: 10.1016/j.ejca.2010.06.118
- 8) Çullu, M., Ülker, S. (2020). Patients' thoughts and demands that they did not express before surgery. *Journal of Intensive Care Nursing*, 24(1), 1-10.
- 9) World Health Organization (WHO). The WHO global strategy on people- centred integrated health services interim report. Service Delivery and Safety. Accessed 2015. https://www.afro.who.int/sites/default/files/2017-07/who-global-strategy-on-pcihs-main-document_final.pdf/;2015.
- 10) Renna, MS., Metcalfe, A., Ellard, D., Davies, D. (2020). A patient satisfaction survey investigating pre- and post-operative information provision in lower limb surgery. *BMC Musculoskeletal Disorders*, 21(754):2-9. <https://doi.org/10.1186/s12891-020-03761-w>
- 11) Tekindağ, M., Arsu Şu. (2020). A review on the scope and process of phenomenological approach as a qualitative research method. *Beyond the Horizon of Scientific Journal*, 20 (1):153- 182.
- 12) Palinkas, LA., Horwitz, SM., Green, CA., Wisdom JP., Duan, N., Hoagwood K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5):533-44. <https://doi.org/10.1007%2Fs10488-013-0528-y>
- 13) Braun, V., Clarke, V. (2021). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative research in sport, exercise and health*, 13(2), 201-216.

- 14) Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., ... & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*, 52(4), 1893-1907.
- 15) Akbaba, A., Mert, H. (2021). Last chance between life and death: experiences of patients with transcatheter aortic valve implantation. *Turk J Cardiovasc Nurs*, 12(29):163-172. DOI: 10.5543/khd.2021.21-15-23
- 16) Karakartal, D. (2018). Examination of psychosocial problems experienced by cancer patients. *International Journal of Humanities and Education*, 4(9):48-62.
- 17) Yıldırım, A., Şimşek, H. (2021). Sosyal Bilimlerde Nitel Araştırma Yöntemleri, 12. baskı. Ankara, Seçkin Yayıncılık.
- 18) Polit, DF., Beck, CT. (2008). *Nursing research: generating and assessing evidence for nursing practice*. 8th ed. Lippincott Williams & Wilkins.
- 19) King, J., Chamberland, P., Rawji, A. et al. (2014). Patient educational needs of patients undergoing surgery for lung cancer. *J Cancer Educ*. 29(4): 802–807. doi: [10.1007/s13187-014-0658-2](https://doi.org/10.1007/s13187-014-0658-2)
- 20) Dalby, M., Hill, A., Nabhani-Gebara, S. (2022). Analysis of local qualitative cancer patient experience alongside the 2019 results of the UK National Cancer Patient Experience Survey. *International Journal of Pharmacy Practice*, 30(2):169-174. <https://doi.org/10.1093/ijpp/riab081>
- 21) Mazzocco, K., Masiero, M., Carriero, MC., Pravettoni, G. (2019). The role of emotions in cancer patients' decision-making. *Ecancermedalscience*, 13: 914. doi: 10.3332/ecancer.2019.914
- 22) Choi, S., Ryu, E. (2018). Effects of symptom clusters and depression on the quality of life in patients with advanced lung cancer. *Eur J Cancer Care (Engl)*, 27(1). doi: 10.1111/ecc.12508
- 23) Sun, V., Kim, JY., Raz, DJ. et al. (2018). Preparing cancer patients and family caregivers for lung surgery: development of a multimedia self-management intervention. *J Cancer Educ*, 33(3):557-563. doi: 10.1007/s13187-016-1103-5.
- 24) Morrison, EJ., Novotny, PJ., Sloan, JA., et al. (2017). Emotional problems, quality of life, and symptom burden in patients with lung cancer. *Clin Lung Cancer*, 18(5):497-503. doi: 10.1016/j.clcc.2017.02.008.
- 25) Khullar, OV., Rajaei, MH., Force, SD. et al. (2017). Pilot study to integrate patient reported outcomes after lung cancer operations into the society of thoracic surgeons database. *Ann Thorac Surg*, 104: 245-253. doi: 10.1016/j.athoracsur.2017.01.110.
- 26) Grimmett, C., Heneka, N., Chambers, S. (2022). Psychological interventions prior to cancer surgery: a review of reviews. *Curr Anesthesiol Rep*, 12(1): 78–87. doi: 10.1007/s40140-021-00505-x
- 27) Tsimopoulou, I., Pasquali, S., Howard, R., et al. (2015). Psychological prehabilitation before cancer surgery: a systematic review. *Ann Surg Oncol*, 22(13):4117–4123. doi: 10.1245/s10434-015-4550-z
- 28) Chen, Y., Ahmad, M. (2018). Effectiveness of adjunct psychotherapy for cancer treatment: a review. *Future Oncol*, 14(15):1487–1496. doi: 10.2217/fon-2017-0671