

## Pain Management And Pain Coping Strategies Of Cancer Patients: Qualitative Research

### Kanser Hastalarının Ağrı Yönetimi ve Ağrıyla Baş Etme Stratejileri: Nitel Araştırma

Gamze TEMİZ<sup>1\*</sup>, Nermin EROĞLU<sup>2</sup>

<sup>1</sup> Health Sciences University, Hamidiye Faculty of Nursing, Istanbul/Turkey.

<sup>2</sup> Fenerbahçe University, Faculty of Health Sciences, Department of Nursing, Istanbul/Turkey.

#### Abstract

Pain is an important symptom that affects the quality of life of cancer patients. Pain is managed with pharmacological and non-pharmacological approaches such as exercise, acupressure, meditation, yoga, and massage. This study is a qualitative research conducted to determine how cancer patients manage their pain. The population of the study consisted of patients with cancer diagnosis who applied to the oncology clinic of a private hospital. The sample consisted of 33 patients who accepted to participate in the study and met the study criteria. The data of the research were collected using the "Descriptive Characteristics Form" and "Semi-structured Focus Group Questionnaire". The forms were created by scanning the literature. Then thematic analysis was made. The Standards for Reporting Qualitative Research (SRQR) Checklist, which sets the standards for reporting the research, was used. In the study, a main theme (pain) and four sub-themes (strategies for pain management, use of painkillers, choosing the ideal treatment and non-pharmacological interventions) were determined. The mean age of the patients participating in the study was  $45.72 \pm 3.46$ , 60.60% were female, 84.85% were married, 87.9% lived in an urban environment, 48.49% had educational status. were in high school, 48.49% were diagnosed with breast cancer, 48.49% were treated with third cycle chemotherapy, 84.5% took some kind of analgesic for pain, and 60.6% used complementary care methods. detected. It was determined that the patients had difficulties in pain management, used non-prescribed drugs to relieve pain, were reluctant to seek professional medical advice, used non-pharmacological strategies, and tried to manage their pain according to what other people in their family/social circle said.

**Keywords:** Pain management, coping strategies, cancer, qualitative research

#### Özet

Ağrı, kanser hastalarının yaşam kalitesini etkileyen önemli bir semptomdur. Ağrı; egzersiz, akupresür, meditasyon, yoga ve masaj gibi farmakolojik ve farmakolojik olmayan yaklaşımlarla yönetilmektedir. Bu çalışma, kanser hastalarının ağrılarını nasıl yönettiklerini belirlemek amacıyla yapılan nitel bir araştırmadır. Araştırmanın evrenini özel bir hastanenin onkoloji kliniğine başvuran kanser tanısı almış hastalar oluşturmaktadır. Araştırmanın örneklemini ise çalışmaya katılmayı kabul eden ve çalışma kriterlerini karşılayan 33 hasta oluşturmuştur. Araştırmanın verileri "Tanımlayıcı Özellikler Formu" ve "Yarı Yapılandırılmış Odak Grup Anketi" kullanılarak toplanmıştır. Formlar literatür taranarak oluşturulmuştur. Daha sonra tematik analiz yapılmıştır. Araştırmanın raporlanması için standartları belirleyen Nitel Araştırma Raporlama Standartları (SRQR) Kontrol Listesi kullanılmıştır. Araştırmada bir ana tema (ağrı) dört alt tema (ağrı yönetimi için stratejiler, ağrı kesici kullanımı, ideal tedaviyi seçme ve farmakolojik olmayan müdahaleler) belirlenmiştir. Araştırmaya katılan hastaların yaş ortalamasının  $45,72 \pm 3,46$  olduğu, %60,60'ının kadın, %84,85'inin evli, %87,9'unun kentsel çevrede yaşadığı, %48,49'unun eğitim durumunun lise olduğu, %48,49'unun meme kanseri tanısı aldığı, %48,49'unun üçüncü kür kemoterapi tedavisi gördüğü, %84,5'inin ağrı için bir çeşit analjezik aldığı ve %60,6'ının tamamlayıcı bakım yöntemleri kullandığı tespit edilmiştir. Hastaların ağrı yönetiminde zorlandıkları, ağrıyı gidermek için reçetesiz ilaç kullandıkları, profesyonel tıbbi tavsiye alma konusunda isteksiz oldukları, farmakolojik olmayan stratejiler kullandıkları ve aile/sosyal çevrelerindeki diğer kişilerin söylediklerine göre ağrılarını yönetmeye çalıştıkları belirlenmiştir.

**Anahtar Kelimeler:** Ağrı yönetimi, başa çıkma stratejileri, kanser, nitel araştırma

**How to cite (Atif için):** Temiz, G. & Erođlu, N., (2024). Pain management and pain coping strategies of cancer patients: qualitative research. *Fenerbahce University Journal of Health Sciences*, 4(2), 305-314. DOI: 10.56061/fbujohs.1492204

*Submission Date: 29.05.2024, Acceptance Date: 04.07.2024, Publication Date: 26.08.2024*

## 1. Introduction

Pain is defined as the most common negative experience in cancer patients and negatively affecting their quality of life. Cancer pain is one of the important symptoms that can be seen in newly diagnosed people, those receiving treatment or metastatic advanced cancer patients. According to the World Health Organization (WHO) data, approximately 80% of cancer patients receiving palliative care experience moderate or severe pain (Religioni, 2022; Inserra,2022; Eti Aslan, 2014).

Pain is an unpleasant special sensation that originates from any part of the body, accompanies existing or potential tissue damage, can be defined by this damage, covers all the past experiences of the person. As it can be understood from this definition, pain is a sensation that affects the whole life of a person. It is always subjective because of its unpleasant nature. Pain can originate from a certain part of the body, as well as an injury or damage to the body. With this feature, pain acts as a warning system. It drives people to seek help. Another feature of it is that it is directly related to what people lived in the past (Wang, 2022; Seers, 2018; Martin, 2017).

Pain in cancer patients may develop due to causes such as gastrointestinal system damage, stomatitis, myalgia, joint pain, cardiomyopathy, pancreatitis, extravasation, peripheral neuropathy, steroid pseudorheumatism, aseptic bone necrosis. Pain is the fifth vital sign and the purpose of pain assessment is to determine its cause, to understand its effect, and to define pain-specific coping strategies. Pain assessment in cancer is a condition that should be started as soon as the diagnosis is made. It is a subjective finding and since the patient's expression is important in the evaluation, it is important to communicate with the patient (Zhang, 2022; Yang, 2022; Marle, 2022; Zeien 2021).

The patient with pain resorts to many methods to cope with it. These strategies include reducing physical activity, administering complementary therapies, and controlling accompanying symptoms. Cancer pain treatment is performed symptomatically, pharmacologically and non-pharmacologically. The aim is to alleviate the pain as soon as possible and to increase the patient's quality of life (Aebischer, 2022; Wan, 2022; Pilafas, 2022). This study was planned to determine how cancer patients manage the pain they experience and the strategies they use.

## 2. Method

This study is a qualitative research using in-depth focus group interview method. Due to the nature of qualitative research, the results of this research provide in-depth data on patients' emotions and coping styles (Zhang, 2022; Yang, 2022; Zeien 2021; Seers, 2018; Martin,2017)

### 2.1. Purpose of the Study

This study was planned to determine how cancer patients manage the pain they experience and the strategies they use

## 2.2. Research Questions

1. How do you deal with pain?
2. To what extent do you need painkillers to control pain?
3. How do you use pain relievers? On what basis do you choose them?
4. Is there a different method you use to relieve pain? is structured.

## 2.3. Population and Sample of the Research

The population of the study consisted of patients with cancer diagnosis who applied to the oncology clinic of a private hospital. The sample consisted of 33 patients who accepted to participate in the study and met the study criteria. Inclusion criteria for the study; Being older than 18 years old, being literate, diagnosed with cancer and receiving 2 doses of treatment, having experienced moderate-to-severe pain at least three times in the last 1 month, and volunteering to participate in the study. The real names of the patients were not used in the study. Participants were selected based on their capacity to provide information and respond to research questions. Data collection was terminated when the data reached sufficient saturation.

## 2.4. Data Collection and Data Tools

The interviews were conducted face-to-face in a quiet room where only the researcher and the patients were present. The focus group interview was conducted by two academics who are experts in the field. Participants were informed about the study and their consent was obtained. Their conversations during the meeting were recorded on a voice recorder. The information obtained at the end of the meeting was kept confidential. The researchers also took notes about the participants' body language. They paid attention to the participants' gestures and facial expressions. The information obtained at the end of the interview was kept confidential. The information obtained at the end of the interview was kept confidential. The interviews lasted approximately 60 minutes. After the completion of all interviews, the notes were organized by the researchers. The data collection tools of the study consist of two parts, the "Descriptive Characteristics Form", which contains the introductory information about the patients, and the "Semi-structured Focus Group Questionnaire" (Table 1). The forms were created by scanning the literature. In order to evaluate the determined questions in terms of purpose, meaning and scope, expert opinion was obtained and two patients were interviewed. As a result of the pilot study with two patients, the form was rearranged and prepared. Coded data were grouped to create themes. For raw data, opinions were obtained from two experts who had previously conducted qualitative research.

**Table 1.** Semi-structured focus group question guide

| Main theme | Sub-Theme                         |
|------------|-----------------------------------|
| Pain       | Strategies for pain management    |
|            | Use of painkillers                |
|            | Choosing the ideal treatment      |
|            | Non-pharmacological interventions |

### 2.5. Ethical Aspect of Study

In order to carry out the research, the permission of the Fenerbahçe University Academic Research and Publication Ethics Committee (FBU/2020-09) and the institution was obtained. This research was conducted in accordance with the principles set out in the Declaration of Helsinki. Before starting the study, the patients were informed verbally and in writing, by explaining the purpose of the study, the use of the recording system during the interview, where and why the obtained data would be used, and their voluntary consent was obtained.

### 2.6. Limitations of the study

The fact that the study was conducted in a center is among the limitations of the study. Another limitation is the inability to reach more patients due to the COVID-19 outbreak.

### 2.7. Evaluation of Data

The thematic analysis method, which is frequently used in qualitative studies, was used for the analysis of qualitative data (Braun; 2006). This method enables data to be interpreted, analyzed, themes identified and reported in six different ways. Using this method, researchers; (Eti Aslan, 2014) The content of the interview, which was transcribed in order to recognize the data, was read repeatedly, the collected data were defined and the connections between them were revealed; (Wang, 2022) Initial codes created; (Religioni, 2022) Themes and sub-themes were developed by repeatedly searching for similarities and differences between them; (Inserra,2022) Themes were re-examined and edited; (Seers, 2018) Themes identified and named; (Martin, 2017) Themes reported. The themes created separately by the first and second authors were discussed and finalized. Standards for Reporting Qualitative Research (SRQR) Checklist (Tong, 2007). In order to collect the data of the qualitative part of the study, the interviews were conducted by the third author, and the texts were coded independently by the first author and the second author, and themes were created. The themes were finalized after all the authors discussed and reached consensus on the themes created by the two authors independently in the next process.

In content analysis, the data was first encoded. The coded data was grouped to form a theme. For the raw data, opinions were obtained from two experts who had done qualitative research before. The coding process is described in Table 2. Max Qualitative Data Analysis (MAXQDA) Analytics Pro2020 program was used for analysis.

**Table 2.** Coding of qualitative data

---

| <b>Coding Process</b>  |
|--|
| <ol style="list-style-type: none"><li>1. Identifying words, phrases or metaphors in the text.</li><li>2. Reducing data to units of meaning (codes).</li><li>3. Separation of units of meaning into groups with common meaning.</li><li>4. Identifying emerging themes.</li></ol> |

---

### 3. Results

**Table 3.** Descriptive features

| Groups                                     | Frequency(n) | Percent (%) |
|--|--------------|-------------|
| <b>Average Age</b> 45,72 ± 3,46            |              |             |
| <b>Gender</b>                              |              |             |
| Woman                                      | 20           | 60.60       |
| Male                                       | 13           | 39.40       |
| <b>Marital status</b>                      |              |             |
| Married                                    | 28           | 84.85       |
| Single                                     | 5            | 15.15       |
| <b>Location</b>                            |              |             |
| Urban Environment                          | 29           | 87.9        |
| Rural Environment                          | 4            | 12.1        |
| <b>Educational Status</b>                  |              |             |
| Literate                                   | 2            | 6.06        |
| Primary school                             | 4            | 12.1 2      |
| Middle School                              | 8            | 2 4.2 4     |
| High school                                | 1 6          | 48.49       |
| University                                 | 1            | 3.03        |
| Graduate                                   | 2            | 6.06        |
| <b>Cancer Diagnosis</b>                    |              |             |
| Breast Ca                                  | 1 6          | 48.49       |
| Thyroid Ca                                 | 4            | 12.1 2      |
| Lung Ca                                    | 2            | 6.06        |
| Over Ca                                    | 1            | 3.03        |
| Colorectal Ca                              | 8            | 24.24       |
| Nasopharynx Ca                             | 2            | 6.06        |
| <b>Number of Chemotherapy Cures</b>        |              |             |
| 2 Cures                                    | 4            | 12.1 2      |
| 3 Cures                                    | 1 6          | 48.49       |
| 4 Cycles and above                         | 13           | 39.39       |
| <b>Using Analgesics When There Is Pain</b> |              |             |
| Yes  | 28           | 84.85       |
| No   | 5            | 15.15       |
| <b>Using Non-Pharmacological Methods</b>   |              |             |
| Yes  | 20           | 60.60       |
| No   | 13           | 39.40       |

The mean age of the patients participating in the study was 45.72 ± 3.46, 60.60% were female, 84.85% were married, 87.9% lived in an urban environment, 48.49% had high school education. It was determined that 48.49% of them were diagnosed with Breast Ca, 48.49% of them were treated with 3rd cycle chemotherapy, 84.5% of them took some kind of analgesic for pain and 60.6% of them used complementary care methods (Table 3).

In the qualitative phase of the study, which was carried out using a semi-structured interview form, 33 patients were interviewed. As a result of the meeting, four main themes were determined; The data

were divided into four sub-themes under the main theme of pain; 1: pain management strategies; 2: use painkillers; 3: choosing the ideal treatment; 4: non-pharmacological intervention.

### *Theme 1. Pain management strategies*

Participants explained that drug consumption was their usual strategy for pain management. The most commonly used drugs were analgesics and NSAIDs. They stated that they usually use NSAIDs during the most intense days or moments of pain.

A participant's thoughts on this subject are as follows; "When I have pain, I only take the medicine recommended by the doctor. I take the medicine as soon as the pain makes it difficult for me to sleep"

While some of the participants predicted the pain in advance and took analgesics before it started, others stated that they postponed taking analgesics until the pain appeared. Patients who predicted pain reported how by doing this they prevented the increase of pain and therefore had more control over the pain.

A participant's thoughts on this subject are as follows; "When I take painkillers without waiting for the pain to start, I get over the pain less. Controlling the pain relaxes me."

Participants who delayed taking their medication reported that they endured the pain, often because they wanted to avoid the possible side effects of the medication.

A participant's thoughts on this subject are as follows; "I have pain, but I'm more afraid of taking painkillers all the time because of the side effects. That's why I often prefer to endure the pain rather than the side effects."

They recognized the phenomenon of enduring pain as a form of surrender in the face of inevitable pain from time to time.

A participant's thoughts on this subject are as follows; "Pain is inherent in my illness. That is why I accept this process and surrender myself".

### *Theme 2. Using painkillers*

The patients mentioned that they needed painkillers to continue their daily activities even when it was not effective. They even stated that they sometimes increase their doses or resort to intramuscular analgesics. In addition, these patients expressed that they were afraid of the side effects of the painkillers they used.

A participant's thoughts on this subject are as follows; "I need pain relievers to do my daily work. Sometimes my pain is so strong that even if I increase the dose or give an intramuscular injection, it is not effective. I take the medicine even though I know it's not effective. On the other hand, I am very afraid of the side effects of the drug".

Participants seeking professional medical treatment spoke about their negative experiences with pain

management. From their perspective, satisfaction with treatment can vary from one healthcare professional to another. Patients stated that medical professionals focused only on prescribing pain relievers without any direction for other possible solutions.

A participant's thoughts on this subject are as follows; "The approach of hospital employees to pain is different from each other. I don't know who to trust for him. Most of the time, healthcare professionals do not listen to me and only prescribe medication.

### *Theme 3. Choosing an ideal treatment*

Most of the participants agree to use the drugs prescribed by the doctor to control the pain. The process of choosing a pain management strategy takes place through "trial and error" by trying different strategies until the most suitable solution is found by each participant. They stated that they did not consult a healthcare professional because they interpreted pain as a process specific to cancer treatment.

A participant's thoughts on this subject are as follows; "Pain can definitely be treated with painkillers that my doctor gave me. I do trial and error to control my pain. I use whichever drug is more effective. I think it is necessary to consult the hospital staff when I cannot cope.

Participants described how they downplayed the pain and even normalized it. Another reason not to seek professional care is because they fear that healthcare professionals will underestimate the severity of the pain. Finally, patients tend to follow the advice of patients in the social/family circle when choosing pain relievers.

A participant's thoughts on this subject are as follows; "When I have pain, I act as if it doesn't exist, I try to ignore it. I'm trying to solve the pain on my own. Because I think healthcare professionals don't care about my pain. When using painkillers, I get advice from those in my family circle".

### *Theme 4. Non-pharmacological interventions*

All of the participants stated that they used non-pharmacological strategies to control or reduce pain because painkillers were not effective enough. He talked about the simultaneous use of drugs and the application of non-pharmaceutical strategies to better manage pain. They stated that they adopted non-pharmaceutical strategies, relaxation (rest, heat, massage, music, etc.) and distraction techniques. They noted that among common techniques that promote relaxation and thus reduce pain, they prefer physical rest, hot showers, heat treatments, and even drinking hot herbal teas such as chamomile tea.

A participant's thoughts on this subject are as follows; "My pain is so much that the drugs are not effective. I do breathing exercises for him. Sometimes I read a book, listen to music, take a hot shower to forget the pain. I have my brother massage the aching area."

## 5. Discussion

Depending on the developing oncological treatment methods, increased life expectancy and surveillance of cancer patients cause an increase in the prevalence of chronic cancer patients. Today, the treatment of cancer pain still poses an important problem (Schmidt, 2015). There is a need for new treatment models in addition to the triple step therapy of the World Health Organization, which is used as the basis for the treatment of cancer pain and essentially deals with opioids.

In recent years, pain has been described as the fifth vital sign for pain management and assessment, to raise awareness of pain and to increase options in pain treatment. Today, pain is routinely evaluated by health personnel in all clinics and is considered a quality symbol. Improvement in medical methods and patient care, increase in survival time in cancer patients increase the effort to improve the quality of life of patients, and at this point, pain management comes to the fore. The World Health Organization and other institutions publish guidelines for the management and treatment plan of cancer pain, and establish steps for the treatment of cancer pain. Despite these steps, cancer pain poses a major problem for patients (Chwistek, 2017).

Research results show that patients undergoing chemotherapy use different strategies to cope with pain complaints. Some participants believe that analgesics are necessary even before the onset of pain. In contrast, other participants prefer to endure the pain and avoid consuming drugs for fear of possible side effects and developing any tolerance or dependence. At the same time, they stated that they sometimes avoid seeking professional medical help because of the fear that their pain may be underestimated. The choice of coping strategy is usually based on the advice of a close friend or family member, or on trial and error until the most effective pharmacological and/or non-pharmacological strategies are found.

Strategies for overcoming pain include prior drug use, periodic drug use during chemotherapy treatment, "to bear with the pain", and delaying drug intake. He found that taking analgesics before starting chemotherapy treatment is a common practice in the literature (Religioni, 2022; Inserra, 2022; Inada, 2022; Talwar, 2022; Eti Aslan, 2014). It has also been found that due to the perceived ineffectiveness of pharmacological treatment and the need for dose increase, most patients with NSAID-resistant pain have to increase their dose to manage their pain (Wang, 2022). Literature information supports the research results.

According to our study, anxiety and fear of analgesic consumption lead to delay in use. Our findings also show that participants expressed a fear of dependence or tolerance to analgesics. In connection with the avoidance of analgesics, patients simply expressed the concept of "to bear with the pain". It is believed in the literature that this strategy may be related to socio-cultural factors (Inada, 2022; Talwar, 2022; Seers, 2018; Eti Aslan, 2014)

The choice of self-medication and personal pain management strategies is based on personal experimentation and advice given by the social/family circle. Seers et al. stated that patients with pain who do not seek professional care to avoid underestimation of their pain or who are dissatisfied with



the therapeutic options provided by health professionals more prefer alternative methods and self-pain management practices (Seers, 2018).

The study found that all patients adopt a position that is comfortable to relieve their pain. Martin and Barkley found in their study that the use of analgic postures and physical activities such as walking helped relieve pain. In addition, it has been stated that the use of distractions such as watching television or listening to music, diet change and acupressure practices are also effective in pain management (Zhang, 2022).

## **6. Conclusion**

Researching and understanding patients' perspectives on pain management will assist in identifying educational needs and implementing programs that specifically address self-care, self-management and empowerment. With this study, it was concluded that healthcare professionals need more training on the pain experienced by cancer patients and their management of pain. In addition, it was determined that the patients had a lack of knowledge about the side effects of analgesic drugs, drug tolerance and addiction, and it would be appropriate to provide continuous education on the subject.

Patients participating in this study were found to use strategies such as self-medication, reluctance to seek professional medical advice, and non-pharmacological strategies such as adopting analgic positions and seeking advice from others in pain management. Pain management requires a multidisciplinary team approach. There is a need to increase the level of knowledge of healthcare professionals and patients about the nature of pain and pain management.

## **Author Contributions**

Topic Selection: GT, NE; Design: GT, NE; Planning: GT, NE; Data Collection and/or Processing: GT; Analysis and/or interpretation: GT, NE; Writing the Article: GT, NE; Posted by: GT, NE; Critical Review: GT, NE

## **Conflict of Interest**

The authors declare that there is no conflict of interest.

## **Financial Disclosure**

No financial support has been received for this article.

## **Acknowledgments**

We would like to express our endless thanks to all patients who voluntarily participated in the study.

## **References**

Aebischer J. H., Hanna J. E. (2022). Opioid use and misuse: Pain management, drug dependence, and implications for nurses worldwide in 2022.

Braun V, Clarke V.(2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*. 3(2):77-101. <https://doi.org/10.1191/1478088706qp063oa>.

Chwistek M. (2017). Recent advances in understanding and managing cancer pain. *F1000 Research*. 6:94 comprehensive review. PAIN. 2018;159(5):811-818. <http://dx.doi.org/10.12688/f1000research.10817.1?>

Eti Aslan F.(2014). Evaluation of health. Ankara, Academician Bookstore.

Inada, Y. et al.(2022). A cancer-pain analgesia as prolonging strategy of surviving time after failure of adjuvant chemotherapy in patient with progressive bone-metastatic hepatocellular carcinoma. *Case Reports in Gastroenterology*. 16;394-399.

Insera A, Crocoli A. (2022). Palliative care and pain management. *Pediatric Surgical Oncology*. 401. <http://doi.org/10.1201/9781351166126-37>

Marle K, Sharma M. (2022). Evolution of pain in a cancer survivor. *Practical Management of Complex Cancer Pain*. 135.

Martin EM, Barkley TW. (2017). Improving cultural competence in end-of-life pain management. *Home Healthc Now*. 35(2):96-104. <https://doi.org/10.1097/NHH.0000000000000519>.

Pilafas G, Lyrakos G.(2022). Mindfulness-based cognitive theory on cancer pain management: comments on the outcomes of the Aarhus university hospital research protocol. *Health &Research Journal*. 8(1); 4-9. Doi: 10.12681/healthresj.29189

Religioni U, Czerw A, Sygit K., Zdziarski K, Partyka O, Pajewska M, Banaś T. (2022). Pain management strategies among cancer patients. Normalization of the CSQ form. *IJERPH*. 19(2): 1013. <https://doi.org/10.3390/ijerph19021013>

Schmidt BL (2015). What pain tells us about cancer. *Pain*. 156(1): 32-S34.

Seers T, Derry S, Seers K, Moore R. A. (2018). Professionals underestimate patients' pain: a comprehensive review. *Pain*, 159(5), 811-818. <https://doi.org/10.1097/j.pain.0000000000001165>

Talwar, A, Sanika R, Rajender R. Ap. (2022). Pain management practices for outpatients with breast cancer. *Exploratory Research in Clinical and Social Pharmacy*.100155.

Tong A, Sainsbury P, Craig J.(2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International journal for quality in health care, Journal of the International Society for Quality in Health Care*, 19:6;349-357.

Wan Q, Chen H et al.(2022). Effectiveness of different acupuncture therapies for chronic cancer pain: A protocol for systematic review and Bayesian network meta-analysis. *Medicine*. 101(4); e27965. <https://doi.org/10.1097/MD.00000000000027965>

Wang J. H, Wang L.W, et al.(2022). Relationship between prescribed opioids, pain management satisfaction, and pain intensity in oncology outpatients. *Support Care Cancer*. 30(4): 3233-3240. <https://doi.org/10.1007/s00520-021-06722-8>

Yang E, Lu W, et al.(2022). Auricular acupuncture during chemotherapy infusion in breast cancer patients: a feasibility study. *JICM*. <https://doi.org/10.1089/jicm.2021.0256>

Zeien J, Qiu, W, Triay M, Dhaibar H. A, Cruz-Topete D, Cornett E. M, Kaye A. D.(2021). Clinical implications of chemotherapeutic agent organ toxicity on perioperative care. *Biomedicine&Pharmacotherapy*. 146;112503. <https://doi.org/10.1016/j.biopha.2021.112503>

Zhang H. (2022). Cancer pain management—new therapies. *Current Oncology Reports*. 24; 223–226: <https://doi.org/10.1007/s11912-021-01166>