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ARAŞTIRMA / RESEARCH

Evaluation of outpatient cancer patients' use of nonpharmacological methods in the management of chemotherapy-induced nausea and vomiting

Ayaktan tedavi gören kanser hastalarının kemoterapiye bağlı gelişen bulantı-kusmanın yönetiminde nonfarmakolojik yöntemleri kullanma durumlarının incelenmesi

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Abstract

Purpose: The present study aimed to investigate nonpharmacological methods in managing chemotherapy-induced nausea and vomiting by outpatient cancer patients.

Materials and Methods: This descriptive study was conducted in the outpatient chemotherapy unit of Hafsa Sultan Hospital, Faculty of Medicine, Manisa Celal Bayar University, with 251 cancer patients receiving chemotherapy. The study data were collected using the Patient Information Form and the Nausea Visual Analogue Scale (VAS).

Results: Of the patients, 88% (n=221) experienced nausea and vomiting before chemotherapy. The mean score of these patients from the VAS was moderate (5.24 ± 1.84). Of the patients, 82.1% (n=206) used nonpharmacological methods to prevent nausea and vomiting. According to their statements, of the patients who used nonpharmacological methods, 83.5% (n = 172) took hot and cold showers, 50.5% (n = 104) drank herbal teas, 35% (n = 72) had massage.

Conclusion: The severity of nausea was moderate. Most of the patients used nonpharmacological methods. Of these methods, the one used most frequently was taking hot and cold showers. It is recommended that nurses should guide and encourage patients to use evidence-based nonpharmacological methods.

Keywords:. Nausea, vomiting, chemotherapy, nonpharmacological method

Öz

Amaç: Araştırmada ayaktan tedavi gören kanser hastalarının kemoterapiye bağlı gelişen bulantı-kusmanın yönetiminde nonfarmakolojik yöntemleri kullanma durumlarının incelenmesi amaçlanmıştır.

Gereç ve Yöntem: Araştırma Manisa Celal Bayar Üniversitesi Tıp Fakültesi Hafsa Sultan Hastanesi ayaktan kemoterapi birimine başvuran, örneklem seçme kriterlerine uyan, araştırmaya katılmayı kabul eden 251 hasta oluşturmuştur. Araştırma verileri araştırmacılar tarafından hazırlanan 22 sorudan oluşan hasta tanıtım formu ve bulantı sayısal ölçeği kullanılarak toplanmıştır.

Bulgular: Hastaların %88'i kemoterapi uygulaması öncesinde bulantı kusma şikayeti yaşarken bulantı ölçeği puan ortalaması 5,24±1,84 orta düzeyde bulunmuştur. Hastaların %82,1'i bulantı kusmayı önlemede nonfarmakolojik yöntem kullandığını belirtmiştir. Bulantı kusmayı önlemede nonfarmakolojik yöntem kullanan hastaların %83,5'i sıcak/soğuk duş aldığını (n=172), %50,5'i bitkisel çayları (n=104) ve %35'i masajı (n=72) kullandığını bildirmiştir.

Sonuç: Her 10 hastadan dokuzunun kemoterapi uygulaması öncesinde bulantı kusma şikayeti yaşadığı ve hastaların bulantı şiddetinin orta düzeyde olduğu bulundu. Hastaların çoğunluğunun nonfarmakolojik yöntemler kullandığı, en sıklıkla sıcak/soğuk duş aldığı saptandı. Hemşirelerden nonfarmakolojik yöntemlerden kanıta dayalı olanların tercih edilmesi konusunda hastalara rehberlik yapmaları önerilmektedir.

Anahtar kelimeler: Bulantı, kusma, kemoterapi, nonfarmakolojik yöntem

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INTRODUCTION

Cancer is one of the leading causes of death worldwide[1]. Nausea, which is one of the most frequently observed symptoms in cancer patients receiving chemotherapy (59.6%), is at the top of gastrointestinal symptoms.[2] Cancer patients frequently use complementary and alternative medicine (CAM) methods to reduce or control nausea and vomiting, which are among chemotherapy symptoms[3-5].

The World Health Organization (WHO) defined CAM as 'a broad set of health services that are not a part of the own tradition or the traditional medicine of the country and not completely integrated with the dominant health system'[6]. There are studies in the literature which reported that CAM usage alleviates cancer-related symptoms,[7-10] makes treatment compliance easier,[8] increases quality of life,[8,9] and reduces the anxiety levels of the patient.[11]

A study examining the rates of CAM method usage by cancer patients in Turkey determined that cancer patients used CAM methods by 22.1%-84.1%.[12] It was stated that patients in Turkey use CAM by 46.2% on average, and this rate is very high in comparison to other countries[3,13].

Considering the CAM methods that cancer patients frequently resort to in symptom control regarding nausea-vomiting, it is seen that these methods mainly include plant-based products, as well as aromatherapy, hypnosis, reflexology, acupressure, music, meditation, massage, yoga, acupuncture, and relaxation[14,15]. Today, chemotherapy is applied frequently at outpatient chemotherapy units, and patients face problems caused by chemotherapy when they get home. In some cases, the chemotherapy unit's education falls insufficient in patients' coping with problems they experience at home[14,15]. For this reason, this study was planned by considering that investigation of the nonpharmacological method usage statuses of individuals receiving chemotherapy as outpatients in management of chemotherapy-related nausea-vomiting will shed light on clinical practices and be exemplary for studies to be conducted in this field.

MATERIALS AND METHODS

The population of this descriptive and cross-sectional study consisted of 316 patients receiving treatment at the outpatient chemotherapy unit of the Hafsa Sultan Hospital of the Faculty of Medicine at Manisa Celal Bayar University between 8 and 23 July 2019.

For the study to be conducted, written permission was received from the Faculty of Health Sciences at Manisa Celal Bayar University, the Health Sciences Ethics Board of the Faculty of Medicine at Manisa Celal Bayar University (20478486-050.04.04 - E.54934), and the patients who participated in the study.

The study included patients other than pregnant women and children who were at the ages of 18-65, receiving Palonosetron, Aprepitant antiemetic treatment, in at least second or later cycles, had chemotherapy-related nausea complaints, were qualified to understand and respond to questions in terms of cognitive capacity, did not have any psychiatric disease and agreed to participate in the study. The study excluded 30 patients as they received chemotherapy treatment for the first time and 36 patients as they did not experience nausea or vomiting. The study sample consisted of 251 patients determined with the simple random sampling method based on the inclusion criteria.

Data collection

The data were collected by using a Patient Information Form and the Visual Analogue Scale for Nausea. The data were gathered from the patients by face-to-face interviews by the researcher between 08:00-12:00 AM. Data collection took approximately 15-20 minutes.

Patient Information Form

This form that was prepared by the researchers in line with the literature[12,13,16] consisted of 21 questions on the patients' sociodemographic data such as age, sex, educational status, social security, occupation and marital status, disease-related characteristics such as clinical diagnosis, treatment, and comorbid diseases, history of smoking, chemotherapy-related side effects and status of using the complementary-alternative treatment.

Visual Analogue Scale for Nausea

This scale consists of numbers from "0" (no nausea) to "10" (very severe nausea) with 1-cm intervals where the patient marks the severity of the most intense nausea they feel. This scale is one-dimensional scale, and it is mostly used to assess the severity of pain. Visual analog scales are

recommended as they make it easier to define severity, provide ease in scoring and recording, and are useful in floor and ceiling effect assessment.[17] The following numerical scale was used to transform the severity of nausea marked in numbers by the patients into an objective form, and assess it: '0-3' (mild), '4-6' (moderate) and '7-10' (severe).

Statistical analysis

Descriptive statistics were used for continuous variables (mean, SD), whereas frequency distributions were determined for categorical variables. Distribution statistics (frequency, percentage, mean, standard deviation) and Pearson's chi-squared test and Mann-Whitney U test for pairwise comparisons analysis were used in the analysis of the data. The data were analyzed using the Statistical Package for the Social Science (SPSS) 21.0 package software. $p < 0.05$ was considered to be significant.

RESULTS

Descriptive characteristics of the patients

Among the participants, 59.8% (n=150) were female, and the mean age was 58.01±11.61. 82.5% of the participants (n=207) were married, 54.2% (n=136) were primary school graduates, and 48.6% (n=122) were unemployed. 77.3% of the patients (n=194) were oncology patients, and 51.4% (n=122) had an accompanying chronic disease. While 88% (n=220) had complaints of nausea before chemotherapy, 80.1% (n=201) were using pharmacological and nonpharmacological methods together in alleviating nausea and vomiting. The nausea severity of 71.3% of the participating patients (n=179) was moderate, while the mean VAS score was found as 5.24±1.84. Other sociodemographic characteristics of the participants are presented in Table-1.

Tablo-1 Descriptive characteristics of cancer patients (n=251)

Variable	n	%
Sex		
Female	150	59.8
Male	101	40.2
Age	Mean age: 58.01±11.61	
18-40 years	24	9.6
41-64 years	142	56.6
65 – over 65 years	85	33.9
Marital Status		
Married	207	82.5
Single/Widowed	44	17.5
Educational Status		
Literacy	36	14.3
Literate, No primary education	8	3.2
Primary School	136	54.2
Secondary School	15	6.0
High School	34	13.5
University	22	8.8
Occupation		
Retired	104	41.4
Civil Servant	4	1.6
Laborer	16	6.4
Farmer	2	.8
Freelance	3	1.2
Unemployed	122	48.6
Medical Diagnosis		
Oncology	194	77.3
Hematology	57	22.7
Chronic Disease		
None	122	48.6

Diabetes	23	9.2
Hypertension	49	19.5
Heart Failure	11	4.4
Hypertension and Heart Failure	10	4.0
Diabetes, Hypertension and Heart Failure	11	4.4
Diabetes and Hypertension	22	8.8
Diabetes and Heart Failure	3	1.2
Smoking Status		
Non-Smoker	135	53.8
Smoker	23	9.2
Ex-smoker	93	37.1
Smoking duration Mean:12.27±16.77 years	Mean:9.57±14.36 cigarettes per day	
Alcohol Consumption		
No	212	84.5
Social Drinker	8	3.2
Regular Drinker	31	12.4
Nausea Experience before Chemotherapy Application		
Yes	221	88.0
No	30	12.0
Nausea-Vomiting Alleviation		
Pharmacological Methods	46	18.3
Non-pharmacological Methods	4	1.6
Both Pharmacological and Nonpharmacological Methods	201	80.1
CAM Usage in Alleviating Nausea		
No	45	17.9
Yes	206	82.1
Way of Learning about CAM		
Non-user	45	17.9
Friend	168	66.9
Relative	27	10.8
Medical Staff	2	.8
Friend and Relative	9	3.6
Status of Talking about CAM with Medical Staff		
Non-user	45	17.9
I Can Generally Talk	180	71.7
I Sometimes Talk	22	8.8
I Can Never Talk	4	1.6
Nausea Severity Levels	VAS ort: 5,24±1,84	
Mild	36	14.3
Moderate	179	71.3
Severe	36	14.3

CAM usage and benefit status of the management chemotherapy-related nausea-vomiting among the patients and comparisons with nausea severity

Tablo-2. CAM usage and benefit statuses of the outpatients in management of chemotherapy-related nausea-vomiting (n=206)

Method	**Usage n (%)**	**Benefits n(%)**
Massage		
Yes	72 (35)	70(34)
No	134 (65)	136(66)
Relaxation Technique		
Yes	13 (6.3)	12(5.8)
No	139 (93.7)	194(94.2)
Acupuncture		
Yes	0	0

No	206 (100)	206 (100)
Acupressure		
Yes	0	0
No	206 (100)	206 (100)
TENS*		
Yes	0	0
No	206 (100)	206 (100)
Herbal Teas		
Yes	104 (50.5)	96(46.6)
No	102 (49.5)	110(53.4)
Hypnosis		
Yes	0	0
No	206 (100)	206 (100)
Aromatherapy		
Yes	38(18.4)	38(18.4)
No	168(81.6)	168(81.6)
Yoga		
Yes	0	0
No	206 (100)	206 (100)
Reflexology		
Yes	0	0
No	206 (100)	206 (100)
Music therapy		
Yes	5(2.4)	5(2.4)
No	201(97.6)	201(97.6)
Warm-Cold Shower		
Yes	172(83.5)	165 (80.1)
No	34(16.5)	41 (19.9)
Sugar-Free Chewing Gum		
Yes	49 (23.8)	49 (23.8)
No	157 (76.2)	157 (76.2)

*TENS, transcutaneous electrical nerve stimulation

Tablo 3. Comparison of CAM usage in the management of chemotherapy-related nausea-vomiting and their mean nausea severity scores(n:206)

	n	X±SD	Median (IQR)	**z/p**
Massage				
Yes	72	5.68±1.67	5.00 (2.00)	-2.208/0.027*
No	134	5.15±1.85	5.00 (2.00)	
Relaxation technique				
Yes	13	5.84±1.99	5.00 (2.00)	-.753/0.451
No	193	5.30±1.79	5.00 (2.00)	
Herbal teas				
Yes	104	5.25±1.89	5.00 (2.00)	-.927/0.354
No	102	5.43±1.70	5.00 (1.00)	
Aromatherapy				
Yes	38	5.02±1.47	5.00 (2.00)	-1.125/0.261
No	168	5.41±1.86	5.00 (2.00)	
Music therapy				
Yes	5	5.80±0.44	6.00 (.50)	-1.237/0.216
No	201	5.32±1.82	5.00 (2.00)	
Warm-cold shower				
Yes	172	5.39±1.85	5.00 (2.00)	-.876/0.381
No	34	5.05±1.53	5.00 (2.00)	
Sugar-free chewing gum				

Yes	49	5.71±2.08	5.00 (2.00)	-1.067/0.286
No	157	5.22±1.70	5.00 (2.00)	

*p<0.05, IQR: Interquartile Range, z: Mann Whitney U test.

The CAM usage and benefit statuses of the patients in the management of chemotherapy-related nausea-vomiting are presented in Table-2. In nausea-vomiting management, the patients mostly used warm-cold showering by 83.5% (n=172), herbal tea by 50.5% (n=104) and massage by 35% (n=72). The patients stated they benefited from having warm-cold showers by 80.1% (n=165), herbal tea by 46.6% (n=96), and massage by 34% (n=70). All of the patients 100% who had complaints of nausea-vomiting and used CAM (n=206) stated that they never used acupuncture, acupressure, TENS, hypnosis, reflexology, yoga.Table-3 shows the comparison of the outpatients' status of CAM usage in the management of chemotherapy-related nausea-vomiting and their mean nausea severity scores. It was concluded that there was a statistically significant relationship between the mean nausea severity scores and the massage method in the management of nausea-vomiting (Z=-2.208, p=0.027). No significant relationship was determined between the mean nausea severity scores and relaxation methods, herbal teas, music therapy, aromatherapy, warm-cold shower, and usage of sugar-free chewing gum (p>0.05).

DISCUSSION

Patients receiving chemotherapy as outpatients use CAM methods in fighting against the side effects of chemotherapy when they go home. In our study, too, most of the patients (82.1%) used CAM in coping with nausea-vomiting complaints. It is stated that pharmacological treatment does not entirely help reducing the incidence of nausea and vomiting, and for this reason, patients prefer nonpharmacological methods.[18] According to the literature, similarly, 22.1%-84.1% of cancer patients in Turkey used CAM methods[12,13,16]. In a systematic review of studies conducted in five different regions (Australia, Canada, Europe, New Zealand, the United States of America), Horneber et al.[19] reported the usage rate of CAM among cancer patients as 40%. It is believed that the CAM usage rate in our study was high because Turkish society prefers traditional practices more.

The sources of information regarding CAM usage among the patients in this study were family and friends by 77%. In similarity to our study, Kwon et al.[20] reported the sources of information regarding CAM usage among Korean cancer patients like family, relatives, and friends (32%). Yeşil et al.[21] found that breast cancer patients using CAM started using it with the influence of their own and their families, whereas Farooqui et al.[22] determined that cancer patients in Malaysia were mostly influenced by their families and friends to start using CAM. Our study found that most patients used CAM with the recommendations of friends and relatives without counseling healthcare personnel, and thus, this suggested that they could experience incorrect or unnecessary CAM usage or even encounter side effects and health problems. It was determined that 71.7% of the patients using CAM in our study informed healthcare personnel. In the literature, it was stated that sharing information on CAM usage with healthcare personnel among cancer patients was low[20-22]. Providing information on the CAM method used to healthcare personnel is important in increasing the treatment compliance of patients and reducing the risk of complication development. Accordingly, we believe that it is needed to tell cancer patients what CAM methods are and provide education and counseling services regularly regarding the benefits and harms.

In our study, the three most frequently used CAM methods in the prevention of nausea were a warm/cold shower, herbal teas, and massage. Among similar results to those in our study, Toygar et al.[13] reported the most frequently used CAM methods by cancer patients for nausea as phytotherapy, followed by yoga, meditation, and music therapy. Irmak et al. [16] stated that the CAM method most prevalently used by cancer patients was herbal products. Turkish patients usually tend to use plant-based products within the scope of traditional treatment, which may be explained by the that they are more knowledgeable about plant-based products than other mind and body practices and alternative medicine treatments, and they can more easily and inexpensively access plant-based products than other CAM methods. The study also found that lower rates of patients used relaxation techniques, aromatherapy, music therapy, and sugar-free chewing gum to prevent nausea. The study also found that lower rates of patients used relaxation techniques, aromatherapy, music therapy, and sugar-free chewing gum to prevent nausea. In their study which, examined six randomized

controlled trials on the effects of progressive relaxation on chemotherapy-related nausea and vomiting, Tian et al. [23] found that it had a positive effect, especially on the incidence, frequency, and degree of delayed nausea and vomiting. In their study on the effects of periorbital massage and music therapy on chemotherapy-related nausea and vomiting in gastrointestinal cancer, Dadkhah et al.[24] reported that they significantly reduced nausea and vomiting. Zorba and Özdemir [25] stated that massage and inhaled aromatherapy significantly reduced chemotherapy-related acute nausea and vomiting in breast cancer patients. In this sense, our results were supportive of the literature.

While yoga, hypnosis, reflexology, and acupressure practices are preferred more in the management of nausea and vomiting in Western countries, it was determined that none of the patients in our study used these. We believe that this result occurred as the patients did not have sufficient knowledge about these methods, which are not currently practiced in Turkey. As opposed to our results, in the literature, useful methods that may be used to eliminate nausea and vomiting were reported as reflexology by Özdelikara and Tan,[26] yoga and meditation by Toygar et al.,[13] pressure by the acupressure technique on the P6 point by Genç and Tan[27] and hypnosis by Dupuis et al[28].

As a result of our study, the patients' chemotherapy-related nausea severity levels were found to be moderate. There was also a significant relationship between the mean nausea severity scores and the method of massage ($p<0.05$). It was concluded that massage is effective in reducing nausea. Massage therapy reduces the levels of stress hormones such as cortisol, epinephrine, and norepinephrine, and thus, provides relaxation by reducing nausea and vomiting. It is used as the most prevalent CAM method in acute and chronic situations for improving health and preventing diseases.[29] In a meta-analysis study with supportive results to ours, it was reported that massage was effective in nausea-vomiting management.[30] Zorba and Özdemir[25] stated that massage significantly reduced Chemotherapy-related acute nausea and vomiting.

The study was conducted with a small number of participants, and thus the results of this study cannot be generalized for this country. The future studies can be conducted with larger samples using power analyses for indicating the population of diagnosed with cancer in Turkey. Other limitation were collecting data in patients self-reporting.

Healthcare professionals should be aware of high CAM usage among cancer patients experiencing chemotherapy-induced nausea and vomiting. The primary source of information on CAM is possibly unreliable. The attitudes of health care professionals should be improved to provide better information to the patients. Healthcare professionals also have to improve their knowledge of CAM. Thereby, patients may consult healthcare professionals instead of unreliable sources.

In conclusion, in this sample the nausea severity of the patients was moderate. Most of the patients used nonpharmacological methods, and they had warm-cold showers most frequently. Based on the findings of the study, nurses are recommended to guide patients in terms of preferring evidence-based ones among nonpharmacological methods and direct healthy/ill individuals towards effective and correct usage of nonpharmacological methods.

Yazar Katkıları: Çalışma konsepti/Tasarımı: EE, TSM; Veri toplama: EA, CK, EE; Veri analizi ve yorumlama: EA, CK, EE; Yazı taslağı: EE, TSM; İçeriğin eleştirel incelenmesi: EE, TSM, EA, CK; Son onay ve sorumluluk: EE, TSM, EA. CK; Teknik ve malzeme desteği: -; Süpervizyon: EE, TSM; Fon sağlama (mevcut ise): yok.
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