ORIGINAL PAPER

Cancer patients' attitudes towards holistic complementary and alternative medicine in the management of sleep problems

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ABSTRACT

Introduction and aim. Sleep problems are frequently experienced in cancer patients and complementary and alternative medicine (CAM) is solve the problem. However, patients' attitudes towards this practice are crucial. This study was purpose to investigate the attitudes of cancer patients towards CAM practices in the management of sleep problems.
Material and methods. This cross-sectional. and descriptive study was conducted between February-June 2020, on 140 cancer patients in oncology/haematology clinics, three different hospitals in Istanbul. Data were collected by using the Information Form, "Richard Campbell Sleep Questionnaire and The Attitudes towards Holistic Complementary and Alternative Medicine scale".
Results. It was found that the patients had problems with sleep in general 42.74±21.31, mostly in the aspect of the quality of sleep 36.28±26.1. It was determined that stage IV cancer, education and income level of patients affect sleep problems. While female holistic health attitudes were more negative and, their attitudes towards CAM were positive. It was found in the analysis of variance that was performed to determine the difference between the mean scores towards sleep problems of patients in different stages ($F=3.062$; $p<0.05$).
Conclusion. It was found that cancer patients usually had sleep problems, and their attitudes towards CAM practices were positive.
Keywords. cancer, attitude, complementary therapies, sleep

The list of abbreviations:

CAM – complementary and alternative medicine, **NCCIH** – National Center for Complementary and Integrative Health, **RCSQ** – Richard Campbell sleep questionnaire, **HCAMS** – the attitudes towards holistic complementary and alternative medicine scale, **HH** – holistic health

Introduction

Complementary. and alternative medicine (CAM) is defined by the National Center for Complementary and Integrative Health (NCCIH) as non-mainstream that used in conjunction with traditional medical treatments.[1] NCCIH classifies complementary health practice as natural products (vitamin and minerals, probiotics etc.), mind and body practices (acupuncture, chiropractic, yoga, osteopathic manipulation and meditation etc.) and other complementary therapies (such as Traditional Chinese medicine, naturopathy and ayurvedic medicine).[2] CAM is used to reduce the side effects of treatment in cancer patients.[1] It is appeared that CAM practices in cancer patients are used to reduce fatigue, pain, sleep problems and menopausal symptoms, and to improve the quality of life.[3-7] In Turkey, it was reported that patients use CAM to order to fight with cancer, and the prevalence of usage is 22.1–84.1%.[8]

Patients apply to CAM use, especially when they think that they are not able to benefit from medical treatment sufficiently in chronic diseases.[9] Other reasons of CAM usage are how much patient is disturbed by the symptoms, the severity of the disease (such as cancer) and whether they perceive their health as a whole (mind, body and spirit in health).[10] Cancer is a life-threatening disease upon the stage of diagnosis. In addition, sleep problems are frequently encountered depending on the disease and the side effects of the treatments applied. In the meta-analysis conducted with patients with head or neck cancer, it was reported the prevalence of sleep problems was observed as 29% before treatment, 45% during treatment and 40% after treatment.[11] It was also stated that 42.8% of patients with newly diagnosed with breast cancer have insomnia.[12] Sleep disorders, which are frequently seen from the time of diagnosis and continue at the end of the treatment, can affect the quality of life of patients.[13] Patients who do not use or prefer not to use medical methods to cope with their sleep problems can benefit from CAM, which is more accessible.

However, as in every alternative treatment method, the attitudes and behaviors of the patients are important in CAM. Studies on the use of CAM in sleep disorders, which are frequently seen from the time of diagnosis and continue to be seen at the end of treatment, are quite limited. However, in the studies conducted in the world and in Turkey, the results of study that evaluating the attitudes of patients towards holistic CAM in the management of the sleep problems have not been found.[14-16]

Aim

In this study, it was purpose to determine the attitudes of cancer patients towards CAM practices in the management of the sleep problems.

Material and methods

Ethical approval

Written informed consent was obtained from the participants who met the inclusion criteria after the purpose of the study was explained. During the study, the Helsinki Declaration was adhered to. Ethics committee approval was obtained from the Haliç University Non-Interventional Ethics Committee on (2020/decision number: 06) for this study.

Study design

This study was design as a descriptive, cross-sectional study to evaluate attitudes of cancer patients towards CAM practices in the management of the sleep problems. After the purpose of the research was explained, face-to-face interviews were conducted with the participants who agreed.

This study was conducted between February-June 2020, in oncology and haematology clinics, 3 different hospitals in Istanbul, Turkey.

Inclusion criteria

Patients who were diagnosed with cancer at least 1 month ago, 18 years and older, who could speak and understand Turkish and voluntary to participate in the study were included. After explaining the purpose of the study, the patients who answered yes to the question of "Do you have any problems with your sleep" were included in the study.

Exclusion criteria

The patients who answered no to the question of "Do you have any problems with your sleep" were excluded in the study.

Sampling and sample size

According to the analysis performed in the G-Power statistical software, the sample size was calculated as 0.05 and 86 participants with a power significance level of 95% (G*Power Version 3.1.9.2 statistical software). The study was completed with 140 patients.

Data collection

The Socio-demographic information form, "Richard Campbell sleep questionnaire" and the "Attitudes towards holistic complementary and alternative medicine" scales were used in data collection.

The socio-demographic information form

In this study, data were collected with questionnaire prepared by the researchers based on studies. In the form, socio-demographic characteristics such as age, gender, marital and economic levels; and disease-treatment features such as disease stage, treatment type and duration were questioned.[4-13]

Richard Campbell sleep questionnaire (RCSQ)

The Turkish validity and reliability of the scale were made by Ozlu and Ozer and consist of 6 items that evaluate the sleep depth, sleep latency, number of awakenings, efficiency (percentage of time awake), sleep quality and noise level of the environment. The 6th item evaluating the noise level of environment does not count in the calculation of the total score. The Cronbach's alpha value of the original scale is 0.82. Increasing the total score of the scale means an increase in the sleep quality of the patients. Each item consists of a visual analogue scale technique chart between 0-100, and if the total score is between 0-25, it means very poor sleep and between 76-100, it means very nice sleep. The Cronbach's alpha value is 0.92.[17]

The attitudes towards holistic complementary and alternative medicine scale (HCAMS)

Its validity and reliability for our country was made by Erci in 2003. The Cronbach's alpha value, which is the reliability coefficient of the scale, is 0.72. The Cronbach's

alpha value was calculated as 0.76 for this study. The scale has two sub-scales CAM and holistic health (HH). This scale is a Likert-type scale consisting of 11 items. Minimum 11, maximum 66 points can be obtained from the scale. Positive attitude towards CAM increases as the score of the scale decreases.[18]

Statistical analysis

SPSS packaged software was used to evaluate the data (Statistical Package for Social Sciences, version 25.0, SPSS Inc; Chicago, IL, USA). In the analysis of the data, variables were defined as mean, standard deviation (SD), median, frequency, and percentages, and the Chi-Square test were used for comparisons. Normality analysis of data Shapiro-Wilk test was used it. One-way ANOVA and independent samples t test were used for comparisons. Pearson correlation test was used to determine the relationship between RCSQ and the HCAMQ. All results were considered meaningful at $p<0.05$ and a confidence interval of 95%.

Results

The mean age of patients was 61.38±10.45 years, 74.28% of them were male, 87.14% of them were single, 52.14% of them were ≤8 years school graduate, 88.57% of them were not working, and the income of 7.85% is equal to their expenses (Table 1).

Table 1. Socio-demographic characteristics of patients

Characteristics		min–max	X± SD
Age		28–92	61.38±10.45
Others		n	%
Gender	Female	36	25.72
	Male	104	74.28
Marital status	Single	122	87.14
	Married	18	12.86
Education	No formal education	7	5.0
	≤ 8 years	73	52.14
	High school	22	15.71
	University	38	27.14
Employment status	Working	16	11.43
	Not working	124	88.57
Income	Income>Expenses	69	49.28
	Income<Expenses	60	42.85
	Income=Expenses	11	7.85

39.30% of patients were diagnosed with lung cancer, 44.30% of them were in Stage II, 51.42% were receiving chemotherapy treatment and the average duration of the diagnosis was 25.63±21.24 months (Table 2).

They received a total of 26.92±4.42 points from the HCAMQ, 15.43±1.76 from the CAM subscale and 13.44±2.78 points from the HH subscale (Table 3). It was understood that patients' attitudes towards CAM were positive.

Table 2. Characteristics of patients diagnosis and treatment

Characteristics		min–max	X± SD
Diagnosis duration (month)		2–72	25.63±21.24
Others		n	%
Disease Diagnosis	Lung cancer	55	39.30
	Laryngeal cancer	20	14.28
	Breast cancer	32	22.85
	Multiple myeloma	21	15.0
	Prostate cancer	12	8.57
Stage of Disease	Stage I	35	25.0
	Stage II	62	44.30
	Stage III	32	22.85
	Stage IV	11	7.85
Treatment	Chemotherapy	72	51.43
	Radyotherapy	44	31.43
	Chemotherapy+radiotherapy	24	17.14

It was found that they got a total of 38.74±23.64 points from the RCSQ; from the subscales, 42.71±27.72 points from sleep depth, 42.66±27.53 points from sleep latency, 38.18±27.26 points from the number of awakenings, 39.46±26.19 points from percentage of time awake and 36.28±26.16 points from quality of sleep (Table 3). It was determined that the patients had sleep problems according to their total score obtained from the scale. It was also found that most common problem was the quality of sleep.

Table 3. "The Attitudes towards HCAMS and RCSQ" mean total and subscale points of patients*

Scale and Subscale Points		$\bar{x}$± SD
HCAMS (Total)		26.92±4.42
Subscales	Complementary and Alternative Medicine	15.43±1.76
	Holistic Health	12.44±2.78
RCSQ (Total)		38.74±23.64
Subscales	Sleep depth	42.71±27.72
	Falling asleep	42.66±27.53
	Frequency of awakening	38.18±27.26
	Percentage of time awake	39.46±26.19
	Quality of sleep	36.28±26.16

* HCAMS – attitudes towards holistic complementary and alternative medicine scale; RCSQ – Richard Campbell sleep questionnaire

There was no significant relationship between Richard Campbell sleep questionnaire, CAM (R=-0.052; p=0.542), HH subscale (R=-0.084; p=0.327), HCAMS (R=-0.088; p=0.304) and total attitudes towards CAM (p>0.05) (Table 4).

When the relationship between RCSQ in terms of the characteristics of the patients was examined, it was found that there was no relationship according to the treatment method, age, disease duration, employment, marital status and gender (p>0.05), on the other hand, there was

a relationship between the disease stage and sleep scale ($p<0.05$) (Table 5). When the relationship between HH, HCAMS and gender ($p<0.05$) (Table 5). It was determined that Stage IV patients had more sleep problems.

Table 4. The relationship between RCSQ and attitudes towards HCAMS*

Scale	CAM		Holistic Health		HCAMS (Total)	
	R	p	R	p	R	p
RCSQ (Total)	-0.052	0.542	-0.084	0.327	-0.088	0.304

* Pearson correlation analysis was used, $p<0.05$;
HCAMS – attitudes towards holistic complementary and alternative medicine scale; RCSQ – Richard Campbell sleep questionnaire; CAM – complementary and alternative medicine

Discussion

In this study, it was figured out that cancer patients' attitudes towards to CAM were positive. Moreover, it was found that patients had sleep problems, and they had problems with sleep quality at most. It was also spotted that sleep problems were most common in Stage IV cancer patients.

It was found that the majority of patients participating in the study were male and have lung cancer. In the studies with lung cancer patients, it was reported to be more common in males. Since men smoke more than women, they are more likely to get lung cancer.[19]

For similar reasons, it was considered that men participating in this study were diagnosed with lung cancer more.

Lung cancer is mostly asymptomatic, which may lead to delays in diagnosis. Initiating pharmacological treatments for patients with symptoms such as chest pain, cough and dyspnoea, and not being directed for further examination causes this delay.[20] However, thanks to radiological developments such as low-density CT, much smaller lesions can be detected, and it enables early diagnosis.[21] Furthermore, studies on the formation of tobacco-related lung cancer in Turkey since the 2010s have led to develop awareness.[22] Through all these reasons, it was considered that the patients participating in the study were found in Stage II by diagnosing earlier.

Among other symptoms, sleep problems are frequently encountered in cancer.[11] Moreover, sleep problems in patients can occur in different ways such as difficulty in falling asleep, frequent night awakening, early morning awakening and difficulty in getting out the bed.[23] Similar to the literature, it was found that patients in this study experience sleep problems. Moreover, it was also determined that they experienced sleep problems mostly in the sleep quality. In the literature, it was reported that in the studies with breast and advanced cancer patients, sleep quality was decreased.[24,25] It was also found that patients diagnosed as Stage IV in the study group experienced sleep problems more. Sleep

Table 5. The relationship of RCSQ and attitudes towards HCAMS with patient characteristics

Characteristics		RCSQ (Total)			CAM			Holistic Health			HCAMS (Total)		
		$\overline{x} \pm SD$	p	S.V*	$\overline{x} \pm SD$	p	S.V*	$\overline{x} \pm SD$	p	S.V*	$\overline{x} \pm SD$	p	S.V*
Gender	Female	38.06±25.55	0.402	0.841²	14.88±2.39	0.13	-1.524²	12.91±2.66	0.004	-2.926²	26.30±4.14	0.004	-2.892²
	Male	38.74±19.23			15.68±3.04			11.42±2.93			28.60±4.34		
Marital status	Single	34.37±21.94	0.243	1.172¹	17.00±2.61	0.128	-1.532¹	10.87±3.90	0.08	1.715¹	27.87±5.19	0.915	0.107¹
	Married	43.49±21.29			15.40±2.86			12.64±2.74			28.04±4.38		
Education	No formal	29.00±6.51	<0.001	15.565¹	15.38±2.61	0.212	1.420¹	12.52±2.90	0.309	1.203¹	27.91±4.28	0.35	1.128¹
	≤8 years	30.50±9.81			14.75±2.62			16.00±1.41			28.75±1.5		
	High school	59.85±21.98			15.00±2.64			12.71±3.08			27.71±4.38		
	University	56.00±21.46			17.18±3.76			12.31±2.82			29.50±4.4		
Employment	Working	29.90±13.76	0.2	-1.28²	15.20±1.93	0.94	0.06²	13.90±3.07	0.12	1.55²	29.1±4.14	0.29	1.05²
	Not working	37.88±19.00			15.14±2.71			12.44±2.79			27.58±4.32		
Income	Inc.>Exp.	55.79±21.73	<0.001	39.56¹	15.57±3.17	0.87	0.14¹	12.19±2.62	0.763	0.468¹	27.76±4.65	0.873	0.136¹
	Inc.<Exp.	29.69±10.49			15.31±2.6			12.77±2.97			28.09±4.13		
	Inc.=Exp.	29.54±12.02			15.25±1.89			12.00±3.82			27.25±5.31		
Stage of disease	Stage I	43.37±24.71	0.03	3.062¹	15.31±2.27	0.150	1.801¹	11.81±2.9	0.479	0.831¹	27.12±4.24	0.259	1.355¹
	Stage II	41.31±23.35			15.61±2.73			12.80±3.14			28.41±4.6		
	Stage III	38.38±22.02			14.61±2.88			12.48±2.44			27.09±4.42		
	Stage IV	24.85±21.45			16.45±3.79			12.55±2.28			29.00±3.89		
Treatment	CT	37.80±24.26	0.883	0.124¹	15.14±2.6			12.04±2.7	0.577	0.661¹	27.18±4.02	0.530	0.739¹
	RT	39.41±23.43			15.50±3.2			12.84±3.01			28.45±5.06		
	CT+RT	40.36±23.01			15.42±2.76			12.50±2.8			27.92±4.28		
Age (r/p)		R= -0.131 p=0.126			R=-0.05 p=0.557			R=0.08 p=0.352			R=0.018 p=0.832		
Dis. Duration(r/p)		R=0.046 p=0.589			R=-0.001 p=0.991			R=0.033 p=0.699			R=0.021 p=0.81		

* ¹ – One way Anova test was used, $p<0.05$; ² – independent samples t test; Inc – income; Exp – expenses; CT – chemotherapy; RT – radiotherapy

problems increase with aggravating symptoms of dyspnoea and pain in the later stages of the disease.[26]

CAM are used to support modern medicine. Patients usually receive these treatments when they think conventional medicine is inadequate in chronic diseases.[27] In addition to many problems experienced by cancer patients, CAM practices are also used in the solution of sleep problems.[28] With the frequently usage of CAM practices in recent years, awareness is also increasing in the patients. When the HH subscale mean scores and the CAM subscale mean scores of patients participating in this research were evaluated, it was determined that their attitudes were positive. Similar to the results of this study, it was reported that the attitudes towards CAM practices were positive in the studies conducted in cancer patients.[17,29]

In the study found that female scored significantly higher on the HH and subscales. It studies conducted in different countries, it has been reported that female prefer to use CAM more likely in cancer patients. In a study conducted in the USA, it was reported that being female and having a high level of education and income increased the preference for CAM use.[30] In the study carried out in Europe, young and higher-education levels females mostly refer to the use of CAM.[31] In another study, it is reported that being female, young, living in the city, and having a high social status increases the use CAM.[32] In the study conducted in Turkey, it is reported that female use CAM more.[33] The authors attributed the preference for more CAM use by female, those living in the city center and those with high social status, to easier access to information and CAM. In this study, it is thought that female prefer the use of CAM more for similar reasons. Another finding in this study is that people with low education levels have more problems and high-income levels have less sleep problems. Similar to these results, it was reported that female with low education levels experienced more sleep problems in a study conducted with patients with breast cancer.[34] However, there is a study stating that those with higher education and high-income levels have more sleep problems.[35] On the other hand, contrary to this study, it is reported that low-income level negatively affects sleep quality.[36] The reason for this suggests that cancer patients with high-income levels cope with their problems more easily, and therefore their sleep quality is higher. In the literature, it is reported that having a high-income level is a factor that increases coping and quality of life in cancer patients.[37]

Study limitations
This study has few limitations. The important one is that the acquired data were obtained with scales. In qualitative research, it may be possible to obtain detailed information about the positive attitudes of patients about CAM usage and the underlying causes of sleep problems. Another limitation is that the data collected from three different oncology-haematology clinics in Istanbul, Turkey. This makes difficult to generalize the result to Turkey. Nevertheless, it was considered that information about general population can be provided with this study data since Istanbul is the most populous city in Turkey.

Conclusion
In conclusion, cancer patients experience sleep problems at every stage of their illness. However, advanced cancer patients are particularly affected by the sleep problems. In addition, among sleep problems, quality of sleep is affected most.

Nurses' awareness of the decrease in sleep quality of cancer patients will enable them to focus on the solution to these problems. Nursing practices aimed to increase sleep quality from the early stages of cancer may enable patients to experience fewer problems in the later stages.

In future studies, it may be recommended that researchers do it in a larger sample and multicentre. In addition, it is thought that investigating other factors affecting the use of CAM in sleep problems in cancer patients will provide a different perspective.

Acknowledgements

Declarations

Ethics approval

Written consents were obtained from the participants. During the study, the Helsinki Declaration was adhered to. Ethics committee approval was obtained from the Haliç University Non-Interventional Ethics Committee on (2020/decision number: 06) for this study.

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