Original Article

Complementary and Alternative Medicine Use among Turkish Cancer Patients and the Influencing Factors

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Abstract

Background: The use of complementary and alternative medicine (CAM) therapies especially among cancer patients was quite frequent because of many reasons.
Objective: The study was conducted in order to determine the use of CAM therapies among Turkish cancer patients and also determine the influencing factors.
Methodology: This descriptive and cross-sectional study was performed with total 280 patients who received inpatient and outpatient treatment in an oncology clinic of a university hospital. Data were collected by using the Patient Characteristics Form and Complementary and Alternative Medicine Scale. $p<0.05$ was considered as statistically significant.
Results: This study demonstrated that the patients who were women, and receiving outpatient care used energy approaches more often; patients who were single, and had metastatic disease used CAM approaches more often than the others. No significant difference was found between CAM use and education, occupation, performance score, diagnosis, and time of diagnosis. It was determined that 79.3% of the patients did not ask their physician about the use of CAM, and the knowledge about CAM use was taken from the newspaper/ television (36.1%), and friends (36.1%). Most frequent used approaches were nutritional (taking honey, 67.1%), cognitive behavioral (praying always, 41.1%), and biologic (drinking linden tea, 43.6%). The most common reason of CAM use was found as to strengthen the immune system (43.9%).
Conclusion: The use of CAM therapies among Turkish cancer patients was quite frequent. Both health professionals and patients should be informed about the proper use of these approaches.

Key words: Cancer patients, complementary and alternative medicine approaches, nurse

Introduction

Many studies reported the wide range of use of complementary and alternative medicine (CAM) therapies among cancer patients (Can et al. 2009; Molassiotis et al. 2006). Cancer patients are more open to use CAM, since they are faced with a complex situation which is life-threatening, ambiguous and less controllable than the other diseases. The prevelance of CAM use varied from country to country. A study conducted in European countries revealed that CAM use varied between 15% and 73% (Molassiotis et al. 2006). Another study conducted in the United States found CAM use prevelance as 38% (Barnes & Bloom & Nahin 2008) and studies conducted in Turkey reported the prevelance of CAM use between 22.1%-84.1% among cancer patients (Algier et al. 2005; Can et al. 2009; Gozum & Tezel & Koc 2003; Molassiotis et al. 2006; Kav & Hanoglu & Algier 2008; Tas et al. 2005).

Complementary and alternative medicine is defined as “a group of diverse medical and healthcare systems, practices, and products that are not considered to be part of conventional medicine” by the National Center for Complementary and Alternative Medicine. Today, natural healing practices, different kind of botanicals, many nutritional products, such as dietary supplements, herbal supplements, and vitamins are used under the head of CAM (Can & Aydiner 2011). The reasons for using these methods widespread are; easily accessibility of some approaches, failure of conventional

therapies, providing unmet health needs, and strengthening mind and body (Algier et al. 2005; Araz & Bulbul 2011; Can et al. 2009; Gozum & Tezel & Koc 2003; Molassiotis et al. 2006; Kav & Hanoglu & Algier 2008). Also some CAM therapies are used, because they take up more space in media, and some are preferable because of the thoughts that they are entirely natural or the beliefs that body has potential to heal itself with the assistance of these approaches. However, the positive or negative effects of CAM use are not well known by patients and also healthcare professionals. Although some studies determined the effectiveness of some CAM therapies, there still are significant questions whether these methods are safe and how they will affect adversely the healthy/ unhealthy individual's care and treatment (Richardson 1999; Turan & Ozturk & Kaya 2010).

Since, the cancer incidence and the survival time are increasing worldwide, the number of patients who need more information and want to access these therapies are increasing too (Inanc et al. 2006; Richardson 1999). The safety use of CAM treatments is an important problem. Many studies revealed that patients had received the information about CAM mainly from friends, family members, relatives or the media without asking to the health care professionals Algier et al. 2005; Can et al. 2009; Kav & Hanoglu & Algier 2008; Tas et al. 2005). However, anyone who needs information about the safety, risks, and benefits of CAM therapies should gather information from reliable sources such as health care professionals and government-sponsored websites. Oncology nurses have an important role in CAM use of cancer patients in daily clinical practice. As they are one of the closest health care professionals in caring and education of individuals, families and community, their role in CAM use is very important and have become a necessity (Araz & Bulbul 2011; Can & Aydiner 2011; Kav & Hanoglu & Algier 2008; Turan & Ozturk & Kaya 2010). Nurses are required to give evidence-based CAM nursing care and counsel the patients about these therapies in order to enhance their quality of life and symptom relief (Klafke et al. 2016). In Turkey, the Cancer Advisory Board by Alternative and Complementary Medicine Advisory Committee has been established and institutionalized under the roof of the Ministry of Health and published a CAM guide by the year 2014. This board is now organizing the proper and safety use of these approaches (Turkish Ministry of Health, Complementary and Alternative Medicine Therapies Report 2014). The aim of this present study was to determine the CAM use and the factors affecting CAM use among cancer patients living in Trakya Region of Turkey.

Methods

Research setting and sample

This was a descriptive and cross-sectional study performed with total 280 patients who were being treated in the oncology clinic of a university hospital between January-May 2012. The sample size was statistically computed according to the annual number of cancer patients and prevelance of CAM use. The acceptable value for α and β was 0.05 and 0.10, respectively. The required number was determined as 265. In this study, 280 patients were included according to criterias such as had a cancer diagnosis, 18 years and older, able to communicate, read and write in Turkish, willing to participate in the study.

Data collection

The Patient Characteristics Form and Complementary and Altenative Medicine Scale were used in order to collect data. Researchers made face to face interviews with the patients. Each interview took approximately 15 minutes.

The Patient Characteristics Form was developed by the researchers to assess sociodemographic (e.g. age, gender, income, marital status, education, employment status) and cancer related factors (e.g. cancer type, diagnosis period, treatment type) of the patients.

Complementary and Altenative Medicine Scale (CAMS) was developed by Can et al. (2009) to determine the complementary and alternative approaches used by Turkish cancer patients. First version of the scale consisting of 55 items were revised by the year 2011, new items were added and some changes were made in the structure of the scale. Current version of the scale was composed of 5 subgroups and 64 items. The subgroups were Cognitive Behavioral Approaches (15 items), Manipulative Approaches (6 items), Alternative Medical Approaches (1 item), Energy Approaches (2 items) and Biologic Approaches (40 items). The usage of approaches in subgroups were asked with two questions:

Question 1) How often do you use these approaches in order to relieve? Answers were "None"-1 point, "Sometimes"-2 point, "Frequently"-3 point, "Always"-4 point.

Question 2) How was your attitude about using these CAM approaches after cancer diagnosis? Answers were "Stopped"-0 point, "Started to take"-1 point, "Used before the cancer diagnosis"-2 point. Patients who stated that they used CAM approaches before cancer diagnosis were also asked if any change occured in using these approaches after the daignosis and assessed as "Decreased"-1 point, "Increased"-2 point, "Continued to take as usual"-3 point.

The score of the scale was calculated as "0 point", if the patient "never used or stopped to take"; "1 point", "if the patient used CAM approaches", and points given above were used according to frequency of usage. Individual items on each subscale were summed and divided by the number of item of related subgroup in order to find the subscale scores. Total score of the scale was calculated by adding all items together and dividing the sum by the number of items. In order to make comparisons between the scores, subgroup scores and total score of the scale was converted to 100 point system as below.

Subgroup score = [Subgroup score/ number of items of the subgroup] x 100

Total score of the scale = [Total score of the scale/ number of items of the total scale] x 100

Ethical considerations

The study-protocol was approved by the Ethics Committee of a Medical Faculty. Permissions were taken from the institution and the patients who were suitable to participate in the study were informed about the purpose of the study and asked for verbal approval.

Data analyses

Data analyses was performed with SPSS version 11.0 (SPSS Inc., Chicago, IL,USA). Descriptive statistics as mean, percentage, frequency and standard deviation were used in order to demonstrate the personal and cancer related characteristics and as well as for the scale. The personal and cancer related characteristics were compared by using Mann-Whitney U test, One-way ANOVA (as a further analysis Tukey HSD), Kruskal-Wallis test (as a further analysis Tukey and Bonferroni Correction Mann Whitney Analysis) were used to compare the subscale averages of the CAM scale. The relationships were evaluated with Spearman's rho correlations. For all statistical analyses, a two-sided p-value of less than 0.05 was considered as significant.

Results

The mean age of the group was 57.52 ± 12.9 years. More than half of them were male (n= 141, 50.4%), 82.5% (n = 231) were married, 89.6% (n = 251) had moderate level of income, and more than half of them (53.2%) had primary school graduation. Moreover, 25.4 % (n=71) of the patients had lung cancer, 68.9 % (n = 193) had primary disease, 35% (n = 98) of the patients' ECOG performance score was 1 as "there are symptoms of the disease, but it is sufficient to fulfill their daily life activities", 68.2% (n=191) received inpatient treatment, 70.4 % (n=197) did not receive chemotherapy before, 63.2% (n = 177) had an operation before, and 63.2% (n = 177) received radiotherapy (Table 1).

CAM approaches used by the patients

In the content of cognitive behavioral approaches, The frequent cognitive-behavioral approaches used among patients were "praying" 75%, "laughing" 73.2%, "visiting a neighbour" 63,2%, "doing exercise" 43.6%, and "namaz" 41,8% respectively (Tablo 2). Other approaches such as medidation, yoga-plates, hypnosis were not commonly used; 98,2% of the patients never did meditation, 94,3% never did yoga-plates, 88.6% never did hypnosis. Islamic rituels were more common used, as praying, 41.4% of the patients always prayed and 17,9% of the patients always performed namaz in their daily lifes (TablE 2).

Regarding the use of manipulative approaches, it was found that 98.9% of the patients never wore an arm band, 91.1% never went to a chiropractor, 87.5% never had glass cupping on the back, 35% sometimes rubbed wrists with cologne, 27.9% sometimes had body massage, and 26.1% sometimes had foot massage. (Table 2). Alternative medical approaches were rarely mentioned, only 1.4% of the patients had often and 1,4% had sometimes had made acupuncture at all (Table 2).

Table 1. Distribution of sociodemographic and disease related characteristics of patients (n=280)

Characteristics	Number (n)	%
Gender		
Female	139	49.6
Male	141	50,4
Marital status		
Married	231	82.5
Single	49	17.5
Income		
Poor	25	9
Moderate	255	91
Education		
Illiterate	33	11.8
Literate	31	11.1
Primary school	149	53.2
Secondary school	23	8.2
High school	30	10.7
University	14	5.0
Diagnosis		
Lung	71	25.4
Head And Neck	30	10.7
Urological	16	5.7
Breast	47	16.8
Gynecologic	24	8.6
Upper-GIS	31	11.1
Sub-GIS	43	15.4
Other	18	6.4
Disease Status		
Primer	193	68.9
Metastatic	87	31.1
ECOG Performance Score		
ECOG 0	84	30.0
ECOG 1	98	35.0
ECOG 2	57	20.4
ECOG 3	31	11.1
ECOG 4	10	3.6
Treatment Status		
Inpatient	191	68.2
Outpatient	89	31.8
Had chemotherapy before		
Yes	83	29.6
No	197	70.4
Had operation before		
Yes	177	63.2
No	103	36.8

Had radiotherapy before		
Yes	177	63.2
No	103	36.8

ECOG Performance Score : Eastern Cooperative Oncology Group performans score

Table 2. Frequency of use of different kinds of CAM approaches

	Cognitive Behavioral Approaches	Never		Sometimes		Often		Always	
		n	%	n	%	n	%	n	%
CBA-1	Dancing	215	76.8	37	13.2	28	10.0	0	-
CBA-2	Laughing	75	26.8	110	39.3	87	31.1	8	2.9
CBA-3	Making picture	225	80.4	24	8.6	21	7.5	10	3.6
CBA-4	Hypnosis	248	88.6	19	6.8	12	4.3	1	0.4
CBA-5	Yoga-pilates	264	94.3	8	2.9	6	2.1	2	0.7
CBA-6	Meditation	275	98.2	4	1.4	0	-	1	0.4
CBA-7	Namaz*	163	58.2	47	16.8	20	7.1	50	17.9
CBA-8	Praying	70	25.0	37	13.2	58	20.7	115	41.1
CBA-9	Carrying amulets	242	86.4	13	4.6	2	0.7	23	8.2
CBA-10	Visiting a tilt	201	71.8	39	13.9	16	5.7	24	8.6
CBA-11	Going to a cleric	227	81.1	44	15.7	7	2.5	2	0.7
CBA-12	Pouring lead	241	86.1	31	11.1	8	2.9	0	-
CBA-13	Doing exercise	158	56.4	95	33.9	21	7.5	6	2.1
CBA-14	Visiting a neighbour	103	36.8	78	27.9	71	25.4	28	10.0
CBA-15	Vowing	194	69.3	82	29.3	4	1.4	0	-
	Manipulative Approaches	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
MAN-1	Body massage	183	65.4	78	27.9	16	5.7	3	1.1
MAN-2	Foot massage	187	66.8	73	26.1	17	6.1	3	1.1
MAN-3	Plaining wrist with cologne	152	54.3	98	35.0	26	9.3	4	1.4
MAN-4	Grinding glass (a kind of cupping)	245	87.5	30	10.7	4	1.4	1	0.4
MAN-5	Going to chiropractor	255	91.1	17	6.1	7	2.5	1	0.4
MAN-6	Wearing an armband	277	98.9	0	-	3	1.1	0	-
	Alternative Medical Approaches	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
AMA-1	Acupuncture	272	97.1	4	1.4	4	1.4	0	-
	Energy Approaches	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
EA-1	Making reiki	199	71.1	33	11.8	33	11.8	15	5.4
EA-2	Taking a consult from a bioenergy specialist	267	95.4	12	4.3	1	0.4	0	-

CBA: Cognitive Behavioral Approaches, MAN: Manipulative Approaches, AMA: Alternative Medical Approaches, EA: Energy Approaches

Table 3. Patients' usage of Biologic Approaches

	Biologic Approaches	Stopped		Began		I was using before the cancer diagnosis						Total	
						Decreased		Increased		Continue the same			
		n	%	n	%	n	%	n	%	n	%	n	%
BIO-1	Stinging nettle	14	16.9	39	47.0	6	7.2	5	6.0	19	22.9	83	29.6
BIO-2	Black seeds	5	11.9	14	33.3	0	-	1	2.4	22	52.4	42	15.0
BIO-3	Lavandula stoechas	2	9.5	9	42.9	2	9.5	1	4.8	7	33.3	21	7.5
BIO-4	Equisetum	0	-	3	42.9	0	-	0	-	4	57.1	7	2.5
BIO-5	Centaury	0	-	15	62.5	1	4.2	2	8.3	6	25.0	24	8.6
BIO-6	Achillea millefolium	0	-	6	46.2	2	15.4	0	-	5	38.5	13	4.6
BIO-7	Mistletoe	0	-	12	66.7	0	-	1	5.6	5	27.8	18	6.4
BIO-8	Thyme	1	2.1	20	42.6	2	4.3	3	6.4	21	44.7	47	16.8
BIO-9	Camomile	0	-	27	62.8	0	-	1	2.3	15	34.9	43	15.4
BIO-10	Juniper	0	-	7	43.8	0	-	1	6.3	8	50.0	16	5.7
BIO-11	Hibiscus	0	-	9	56.3	1	6.3	1	6.3	5	31.3	16	5.7
BIO-12	Ginger	2	5.0	19	47.5	3	7.5	1	2.5	15	37.5	40	14.3
BIO-13	Sweet almond	0	-	15	50.0	1	3.3	4	13.3	10	33.3	30	10.7
BIO-14	Turmeric	0	-	16	66.7	1	4.2	0	-	7	29.2	24	8.6
BIO-15	Blueberries	0	-	3	60.0	0	-	0	-	2	40.0	5	1.8
BIO-16	Flaxseed	0	-	4	66.7	0	-	1	16.7	1	16.7	6	2.1
BIO-17	Thistle	0	-	3	60.0	0	-	0	-	2	40.0	5	1.8
BIO-18	Soy	0	-	1	33.3	0	-	1	33.3	1	33.3	3	1.1
BIO-19	Green tea	1	0.9	61	54.0	6	5.3	4	3.5	41	36.3	113	40.4
BIO-20	Sage	5	5.8	41	47.7	4	4.7	3	3.5	33	38.4	86	30.7
BIO-21	Linden tea	3	2.5	39	32.0	3	2.5	14	11.5	63	51.6	122	43.6
BIO-22	Rosehip tea	2	2.7	22	29.3	2	2.7	9	12.0	40	53.3	75	26.8
BIO-23	Ginseng panex	0	-	2	50.0	0	-	0	-	2	50.0	4	1.4
BIO-24	Royal jelly	1	8.3	10	83.3	0	-	0	-	1	8.3	12	4.3
BIO-25	Grape seed	1	3.4	17	58.6	1	3.4	4	13.8	6	20.7	29	10.4
BIO-26	Extract of grape seed	0	-	10	76.9	0	-	1	7.7	2	15.4	13	4.6
BIO-27	Astragalus	0	-	0	-	0	-	0	-	1	100.0	1	0.4
BIO-28	Sweden syrup	0	-	0	-	0	-	0	-	1	100.0	1	0.4
BIO-29	Omega 3	1	11.1	1	11.1	0	-	0	-	7	77.8	9	3.2
BIO-30	Vitamin	3	13.0	7	30.4	0	-	1	4.3	12	52.2	23	8.2
BIO-31	Shark cartilage	1	25.0	2	50.0	0	-	0	-	1	25.0	4	1.4
BIO-32	Turtle blood	1	1.4	69	97.2	0	-	0	-	1	1.4	71	25.4
BIO-33	Rabbit blood	1	50.0	0	-	0	-	0	-	1	50.0	2	0.7
BIO-34	Anzer honey	3	6.5			8	17.4	2	4.3	33	71.7	46	16.4
BIO-35	Chestnut honey	6	13.6			8	18.2	6	13.6	24	54.5	44	15.7
BIO-36	Black mulberry molasses	7	8.6			11	13.6	17	21.0	46	56.8	81	28.9
BIO-37	Carob molasses	8	8.3			9	9.4	33	34.4	46	47.9	96	34.3
BIO-38	Pomegranate	11	9.5			4	3.4	27	23.3	74	63.8	116	41.4
BIO-39	Garlic	4	3.2			9	7.3	22	17.7	89	71.8	124	44.3
BIO-40	Carrot	2	1.5			7	5.2	25	18.7	100	74.6	134	47.9

BIO: Biologic Approaches, * Namaz: A prayer performed by Muslims five times per day.

Table 4. Patients' usage of nutritional approaches

Nutritional Approaches		Stopped		Reduced		Increased		Continued to use the same		Total	
		n	%	n	%	n	%	n	%	n	%
BES-1	Honey	16	8.5	22	11.7	37	19.7	113	60.1	188	67.1
BES-2	Grapefruit	39	41.5	6	6.4	9	9.6	40	42.6	94	33.6
BES-3	Fruits	2	1.1	10	5.6	69	38.5	98	54.7	179	63.9
BES-4	Vegetables	3	1.8	7	4.1	57	33.3	104	60.8	171	61.1
BES-5	Red meat	14	8.6	46	28.2	20	12.3	83	50.9	163	58.2
BES-6	Fish	9	5.7	21	13.3	36	22.8	92	58.2	158	56.4
BES-7	Chicken	7	4.3	20	12.4	39	24.2	95	59.0	161	57.5
BES-8	Bread and pastries	19	12.2	58	37.2	7	4.5	72	46.2	156	55.7
BES-9	Pastry and milky desserts	24	15.0	58	36.3	5	3.1	73	45.6	160	57.1
BES-10	Milk and milk products	18	10.4	19	11.0	34	19.7	102	59.0	173	61.8
BES-11	Yogurt	12	7.0	11	6.4	51	29.7	98	57.0	172	61.4

Table 5. Comparison of patients' sociodemographic characteristics and the use of CAM approaches

Gender	**Female (n=139)**			**Male (n=141)**			**Z_{MWU}**	**P**
	$\bar{x}$	±SD	Mean rank	$\bar{x}$	±SD	Mean rank		
CBA	31.51	11.95	145.16	30.35	12.25	135.91	-0.97	0.33
MAN	21.46	19.17	136.50	23.88	20.83	144.44	-0.85	0.40
AMA	4.32	20.40	142.54	1.42	11.87	138.49	-1.45	0.15
EN	20.50	28.75	149.55	13.12	24.38	131.58	-2.32	0.02*
BIO	14.51	12.01	145.56	13.46	13.25	135.51	-1.04	0.30
CAM	18.46	9.69	149.62	16.45	8.92	131.51	-1.87	0.06
Marital status	**Married (n=231)**			**Single (n=49)**			**Z_{MWU}**	**P**
	$\bar{x}$	±SD	Mean rank	$\bar{x}$	±SD	Mean rank		
CBA	30.51	12.54	137.62	32.93	9.57	154.09	-1.31	0.19
MAN	21.86	20.13	136.88	26.53	19.22	157.56	-1.68	0.09
AMA	2.60	15.94	140.14	4.08	19.99	142.21	-0.57	0.57
EN	15.80	25.52	138.81	21.43	32.27	148.48	-0.95	0.34
BIO	13.71	12.69	138.60	15.26	12.44	149.46	-0.86	0.39
CAM	16.90	9.12	138.13	20.04	10.05	161.08	-1.96	0.05*
Income	**Low (n=25)**			**Moderate (n=255)**			**Z_{MWU}**	**P**
	$\bar{x}$	±SD	Mean rank	$\bar{x}$	±SD	Mean rank		
CBA	31.20	12.58	138.76	30.90	12.07	140.67	-0.11	0.91
MAN	21.33	19.56	136.50	22.81	21.10	140.89	-0.27	0.79
AMA	4.00	20.00	142.10	2.75	16.37	140.34	-0.36	0.72
EN	12.00	26.14	126.80	17.25	26.92	141.84	-1.11	0.27
BIO	12.60	10.32	135.56	14.12	12.85	140.98	-0.32	0.75
CAM	16.23	9.95	127.00	17.57	9.30	141.82	-0.87	0.38

Education	**Illiterate (n=33)**		**Literate (n=31)**		**Primary school (n=149)**		**Secondary school (n=23)**		**High school (n=30)**		**University degree (n=14)**		**Z_{KW}**	**p**
	$\bar{x}$	**±SD**	$\bar{x}$	**±SD**	$\bar{x}$	**±SD**	$\bar{x}$	**±SD**	$\bar{x}$	**±SD**	$\bar{x}$	**±SD**		
CBA	30.3	10.9	34.8	10.9	34.8	12.8	29.9	11.4	31.6	11.6	30.5	9.32	4.16	0.47

MAN	22.7	23.8	27.4	23.8	27.4	19.5	23.9	22.9	24.4	19.4	20.2	14.9	1.90	0.86
AMA	0	18	3.23	18	3.23	14.1	4.35	20.9	10	30.5	0	0	7.45	0.19
EN	19.7	18.7	8.06	18.7	8.06	24.8	13	27	25	34.1	25	32.5	7.00	0.22
BIO	13.3	8.01	9.84	8.01	9.84	13.6	15.2	12.2	15.2	12.8	13.8	13.7	3.74	0.59
CAM	17.2	7.79	16.7	7.79	16.7	9.03	17.3	10.2	21.2	12.4	17.9	8.17	2.92	0.71

CBA: Cognitive Behavioral Approaches, MAN: Manipulative Approaches, AMA: Alternative Medical Approaches, EA: Energy Approaches, BIO: Biologic Approaches, CAM: Complementary Alternative Medicine, z_{KW}: Kruskal-Wallis Chi-square test

Table 6. Comparison of patients' disease-related characteristics and the use of CAM approaches

Type of cancer	**Primary cancer (n=193)**			**Metastatic cancer (n=87)**			**Z_{MWU}**	**p**
	$\bar{x}$	**±SD**	**meanrank**	$\bar{x}$	**±SD**	**meanrank**		
CBA	30.40	12.13	137.12	32.11	12.01	148.00	-1.06	0.29
MAN	22.37	20.53	138.60	23.37	18.93	144.72	-0.61	0.55
AMA	1.55	12.40	138.68	5.75	23.41	144.55	-1.95	0.05
EN	15.54	26.36	137.23	19.54	27.87	147.75	-1.26	0.21
BIO	13.23	12.60	135.14	15.66	12.64	152.39	-1.66	0.10
CAM	16.62	9.11	133.56	19.29	9.67	155.89	-2.14	0.03*
Treatment type	**Inpatient (n=191)**			**Outpatient (n=89)**			**Z_{MWU}**	**P**
	$\bar{x}$	**±SD**	**meanrank**	$\bar{x}$	**±SD**	**meanrank**		
CBA	30.96	12.55	139.80	30.86	11.12	142.01	-0.22	0.83
MAN	21.90	20.06	137.10	24.34	19.95	147.80	-1.07	0.29
AMA	1.57	12.47	138.70	5.62	23.16	144.37	-1.89	0.06
EN	14.66	26.05	134.81	21.35	28.09	152.72	-2.15	0.03*
BIO	13.78	13.35	137.16	14.41	11.01	147.66	-1.01	0.31
CAM	16.58	8.91	133.16	19.32	10.02	156.24	-2.22	0.03*
Surgical therapy	**Yes (n=177)**			**No (n=103)**			**Z_{MWU}**	**p**
	$\bar{x}$	**±SD**	**meanrank**	$\bar{x}$	**±SD**	**meanrank**		
CBA	30.02	11.81	135.21	32.49	12.48	149.60	-1.46	0.15
MAN	24.39	20.26	147.29	19.74	19.35	128.83	-1.90	0.06
AMA	3.95	19.54	142.04	0.97	9.85	137.86	-1.44	0.15
EN	18.08	27.40	143.84	14.56	25.85	134.76	-1.13	0.26
BIO	13.88	11.23	143.09	14.15	14.81	136.04	-0.71	0.48
CAM	18.07	9.76	145.28	16.38	8.53	132.29	-1.29	0.20
Radiation therapy	**Yes (n=177)**			**No (n=103)**			**Z_{MWU}**	**p**
	$\bar{x}$	**±SD**	**meanrank**	$\bar{x}$	**±SD**	**meanrank**		
CBA	30.23	12.58	121.07	29.96	12.50	118.32	-0.30	0.76
MAN	22.83	19.58	121.94	21.86	20.85	116.95	-0.56	0.57
AMA	4.11	19.92	121.41	1.08	10.37	117.78	-1.35	0.18
EN	11.99	21.42	123.15	8.60	18.97	115.06	-1.24	0.21
BIO	13.01	12.39	120.42	12.96	11.38	119.34	-0.12	0.91
CAM	16.43	8.51	125.16	14.89	7.98	111.90	-1.45	0.15
Chemotherapy	**Yes (n=83)**			**No (n=197)**			**Z_{MWU}**	**p**
	$\bar{x}$	**±SD**	**meanrank**	$\bar{x}$	**±SD**	**meanrank**		
CBA	31.73	12.82	144.30	30.59	11.80	138.90	-0.52	0.61
MAN	24.70	21.52	146.80	21.83	19.35	137.85	-0.87	0.38
AMA	2.41	15.43	139.87	3.05	17.23	140.76	-0.29	0.77
EN	18.07	27.69	143.61	16.24	26.54	139.19	-0.52	0.60
BIO	15.66	13.21	156.69	13.27	12.36	133.68	-2.18	0.03*
CAM	18.51	10.26	146.82	17.00	8.93	137.84	-0.85	0.40

CBA: Cognitive Behavioral Approaches, MAN: Manipulative Approaches, AMA: Alternative Medical Approaches, EA: Energy Approaches, BIO: Biologic Approaches, CAM: Complementary Alternative Medicine, z_{mwu}: Mann-Whitney U Test

Table7. Comparison of patients' type of cancer diagnosis and use of CAM approaches

Type of Cancer diagnosis	Lung (n=71)		Head And Neck (n=30)		Urological (n=16)		Breast (n=47)		Gynecologic (n=24)		Upper-GIS (n=31)		Sub-GIS (n=43)		Other (n=18)		Z_{KW}	p
	$\bar{x}$	±SD	$\bar{x}$	±SD	$\bar{x}$	±SD	$\bar{x}$	±SD	$\bar{x}$	±SD	$\bar{x}$	±SD	$\bar{x}$	±SD	$\bar{x}$	±SD		
CBA	32,3	13,6	27,6	11,8	31,7	14,9	31,5	12,1	28,1	9,4	30,1	10,3	30,1	11,6	36,3	10,0	8,29	0,31
MAN	20,9	21,0	26,7	20,8	33,3	20,2	20,9	17,2	24,3	20,8	21,5	17,3	21,7	19,4	20,4	25,3	7,89	0,34
AMA	1,4	11,9	0,0	0,0	0,0	0,0	8,5	28,2	4,2	20,4	0,0	0,0	0,0	0,0	11,1	32,3	13,9	0,05
EA	14,8	25,9	11,7	25,2	18,8	31,0	16,0	23,6	14,6	27,5	14,5	23,1	29,1	33,2	11,1	21,4	10,6	0,16
BIO	13,5	12,8	12,2	8,6	15,0	8,9	14,2	10,4	15,2	12,5	18,5	11,7	13,3	18,3	9,7	10,9	13,9	0,05
CAM	16,6	8,4	15,6	8,3	19,8	9,8	18,2	10,1	17,3	10,4	16,9	8,6	18,8	9,6	17,7	11,7	4,46	0,73

CBA: Cognitive Behavioral Approaches, MAN: Manipulative Approaches, AMA: Alternative Medical Approaches, EA: Energy Approaches, BIO: Biologic Approaches, CAM: Complementary Alternative Medicine, Z_{KW}:Kruskal-Wallis Chi-square test

Regarding the use of energy approaches, 95.4% of the patients never took a consult from a bioenergy specialist and 71.1% never did reiki at all. Of the patients 11.8% sometimes did reiki and 4.3% sometimes took a consult from a bioenergy specialist (Table2).

Patients reported the use of biological approaches in many ways, such as stopped to use, began to use, increased, decreased or continued to use the same after cancer diagnosis. Biological approaches were most frequently used as respectively; "carrot" 47.9%, "garlic" 44.3%, "linden tea"43.6%, "pomegranate" 41,4%, "green tea" 40,4%, "sage" 30.7%, "nettle" 29.6%, and "turtle blood" 25.4% (Table 3). It was also determined that patients used nutritional approaches, such as 67.1% of them took honey, 63.9% of them took fruit, 61.8% of them took milk and dairy products, 41.5% of them stopped taking grapefruit, 37.2% of them reduced taking bread and pastries, 38.5% of them increased taking fruit, 60.8% of them carried on taking vegetables. (Table 4).

This study determined that 79.3% of the patients did not ask their physician about the use of CAM. When the source of the knowledge about CAM use was asked; 36.1% of the patients stated that they heard from the newspaper/ television and 36.1% of them reported that they learnt from friends. The most common reasons of CAM use were found as to strengthen the immune system (43.9%), to prevent the progression of the disease (34.6%), and to strengthen the effect of the treatment (32.9%).

This study demonstrated that women used energy approaches more than men, single patients used CAM approaches more than married patients (Table 5). Moreover, metastatic patients used CAM approaches more than patients with primary cancer, outpatients used energy approaches and CAM approaches more than inpatients, and patients who received chemotherapy used

biologic approaches more than the patients who did not receive chemotherapy (Table 6). No difference was found between the patients' cancer type and CAM use (Table 7).

Discussion

Complementary therapies are widely used among cancer patients. However, there is a lack of knowledge about their effective and safety use. In this study, frequent used cognitive-behavioral approches were found as praying, laughing, visiting a neighbour, physical exercise and namaz. It was found that other approaches such as medidation, yoga-plates, hypnosis which are more popular in the world recent years, were rarely used. In addition, a few patients reported the use of energy approaches and manipulative approaches. This might be related with the lack of enough knowledge and awareness of patients about these therapies. And also, patients in this study were living in a small city and rural areas, so accessibility of these approaches were not easy and economic for them. An earlier Turkish study also found most frequently used CAM methods as religious practices and herbs (Can et al. 2009). Since most of the Turkish people are Muslim, Islamic rituels such as praying to God and namaz were frequently seen among cancer patients. A study evaluating the CAM use on children cancer patients found that the most common method used among parents was praying too (Yeter 2012). Another study revealed a similar result that spirituel remedies such as praying was most common seen among parents who had children receiving cancer treatment (Revuelta et al. 2014). As praying is an approach that could be done individually, a spiritual feeling between the individual and the God, without any harmful effects and providing relief and calmness, we saw that cancer patients and their families frequently used this approach

Nowadays, different kinds of botanicals and nutritional products, such as dietary supplements, herbal supplements, and vitamins are used as CAM therapies in many chronic conditions. A study conducted by Scott et.al (2005) found that dietary supplements, religious practices and mind-body practices were the most common used CAM approaches, and green tea had been reported to be the most popular herbal in UK. Dogu et al. (2014) found the most frequently used methods as herbal therapy and vitamins. The most commonly used herb was the stinging nettle alone or in combination, the second plant was raisin. Another study conducted by Yıldız (2006) found that the most popular alternative therapies among cancer patients were herbal medicine, religious practices, multivitamin and antioxidant therapy, and non-herbal agents (honey, turtle blood, shark cartilage, etc.) the most commonly used herbal treatment was found as stinging nettle (75%). Kav et al. (2008) stated that the most frequently used CAM method is the mixture of herbs and stinging nettle. Can et al. (2009) reported that green tea was the frequent used plant, stinging nettle was the third one.

In this study, it was found that cancer patients used nutritional approaches. It is thought that cancer diagnosis improved their awareness about nutrition and healthy diet. Cancer patients reported the most common nutrients such as carrot 47.9%, garlic 44.3%, lime tea 43.6%, pomegranate 41.4%, green tea 40.4%, sage 30.7%, nettle 29.6%, and turtle blood 25.4%. As Thrace region has geographical location close to Bulgaria where the use of turtle blood was used as a common method. Another study investigating the herbal medicine among cancer patients established the most common herbs such as nettle (52%), thyme (28.2), ginger (24.1%), and black cumin (22.3%) and others (Tuna et al, 2013). It is thought that the difference of popular herbs use is due to the diversity of the plants and cultural differences of the regions where patients inhabited. This might be related with the fact that easy availability, cultural factors, and geographical location were important variables in the selection CAM approaches. For example, it was found that

biologically based practices were common seen in Brazil because of it's rich botanic biodiversity (Alfano et al. 2016).

Studies demonstrated that most of the cancer patients did not inform or discuss CAM use with the health care professionals (Molassiotis et al. 2006; Can et al. 2009; Algier et al. 2005; Gozum & Tezel& Koc 2003; Tuna & Dizdar & Calis 2013). Similar to these findings, this study also found that 79.3% of the patients did not consult a physician about CAM use. When it was questioned the source of obtaining information about CAM use, patients stated that they had learnt from friends, and newspaper/television. In addition, other research results also demonstrated the main sources of information about CAM such as friends/family and the media (Can et al. 2009; Gozum & Tezel & Koc 2003; Molassiotis et al. 2005; Molassiotis et al. 2006; Tuna & Dizdar & Calis 2013).

The reasons of CAM use varied among cancer patients. Studies reported the most common reasons about CAM use of cancer patients as to reduce cancer and treatment related effects, strengthen immune system, reduce stress, enhance quality of life (Can et al. 2009; Gozum & Tezel & Koc 2003; Molassiotis et al. 2005; Molassiotis et al. 2006; Kav & Hanoglu & Algier 2008). Similar to these findings, cancer patients reported the use of CAM as to strengthen the immune system (43.9%), believed that CAM would be effective in preventing the progression of the disease (34.6%) and to strengthen the effect of the treatment (32.9%).

Lung cancer is the most prevelant cancer type seen in men in Turkey, and 25.4% of the patients in this study had lung cancer. As it is generally diagnosed at late stages, and more than half of the patients with lung cancer had metastasis at the time of diagnosis (Turkish Ministry of Health, Cancer Statistics Report 2017). It was found that patients diagnosed with metastatic disease used CAM therapies more often when compared to the patients diagnosed with primary cancer. Metastasis is an indication of deterioration of the prognosis and it was thought that the patients with metastasis used CAM therapies to prevent the worsening of the disease and need to relax both physically and emotionally. Can et al. also demonstrated a similar finding that the metastatic cancer patients were more likely to use CAM (Can et al. 2009).

It was found that patients receiving outpatient treatment used CAM approaches more often when compared to patients receiving inpatient treatment. This might be related with the fact that outpatients have better general health status and could cope with the treatment-related side effects much better than inpatients. Generally, inpatients experienced the disease and treatment-related symptoms more intense and were hospitalized in order to provide symptom control and enhance quality of life, perhaps they could not believe that they could get benefit from CAM approaches. In this study, no difference was found between the patients' cancer type diagnosis and CAM use.

However, Molassiotis et.al. demonstrated that CAM use were more common in patients with pancreas, liver, bone, brain cancer; subsequent to patients with breast, stomach, gynecological tumors and genitourinary cancer. Aktan et al. found that lung, head and neck cancer group had less preferred CAM applications. Dogu et al. found no significant difference between type of cancer, stage of disease, and type of therapy received before and CAM use (Aktan & Altan 2011; Dogu et al. 2014; Molassiotis et al. 2005).

Studies demonstrated different findings about the relationship sociodemographic characteristics of cancer patients and CAM use. Dogu et al. stated that while marital status, educational status were found as statistically significant variables for CAM use; age, gender, occupation were not found statistically significant. Ugurluer et al.found no significant correlation between CAM use and socio-demographic characteristics of the

patients (Dogu et al. 2014; Ugurluer et al. 2007). While some study results demonstrated that the level of the overall CAM use was more common in women, Yildiz found that men had used more CAM approaches (Yildiz 2006). In this study, half of the patients were women and it was found that women used energy approaches more often compared to men. This might be related with the fact that women were more curious and followed new CAM therapies and had more tendency to believe energy approaches than men. In this study, CAM use was more common in single patients compared to married ones. While some studies found no relationship between marital status and CAM use a study reported a similar result to our study finding that CAM use was more common among the singles (Johannessen et al. 2008). Nazik et al.also found no relationship between marital, and occupational status of patients with gynecological cancer. In this study, it was found that most of the patients had moderate level of income and no difference was found between income level and CAM use (Nazik et al. 2012).

Other, some studies reported that CAM use was associated with low socioeconomic status, some found that CAM use was associated with higher income (Akyurek & Onal & Kurtman 2005; Ceylan et al. 2002; Johannessen et al. 2008; Tas et a. 2005). The cost of CAM practices, therapies and products vary according to their type, some could be learnt by watching DVD, whereas others cost higher amounts of many and need attendance to healing centers. In this study, it was found that patients mostly used religious practices and did not use therapies needing higher amounts of money. So, this might be the reason of finding no relationship between income and CAM use of cancer patients.

Conclusions

Oncology nurses had an important role in advising and supporting of cancer patients about the use of suitable CAM therapies with it's potential benefits, and risks. In this study, while age, gender, marital status, disease status, and the treatment were found as important variables in terms of CAM use; no significant diffrence was found between educational level, occupation, ECOG status, type of cancer diagnosis and diagnosis time with CAM use. Effective use of CAM therapies requires good collaboration of cancer patients and health care professionals to discover when, and how to use these therapies and also their benefits and damages. All health professonals caring cancer patients, and especially nurses must have sufficient knowledge of these approaches, fully inform the patients on the issues such as potential risks, benefits, restrictions and guide them away, and respond to patients' questions in a clear way.

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