USE OF COMPLEMENTARY/ALTERNATIVE MEDICINE (CAM) BY CANCER PATIENTS AT A UNIVERSITY HOSPITAL

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Abstract:

Background and purpose: *Complementary and alternative medicine (CAM) therapies are commonly used by cancer patients around the world. The aim of this cross-sectional study was to explore the extent of CAM therapies use by cancer patients, discover patients' motives, sources, and beliefs regarding the benefits of CAM therapies, and determine patient awareness of possible adverse effects.*

Materials and methods: *A comprehensive, validated questionnaire in Arabic was explained and given to patients who provided their consent to participate. All patients attended King Saud University-Medical City Oncology Center.*

Results: *Among the patients, 136 responded to the questionnaire and 97 (71.3%) reported using some form of CAM therapies. The most frequently used CAM therapies were Zamzam water (Holy water from Makkah), honey, olive oil, black seeds, dates, and camel milk (with/without camel urine). Many patients were unaware of any adverse effects of CAM therapies. Statistical analyses showed that there were no significant differences between users and non-users in terms of gender, age, nationality, marital status, or educational level (p>.05).*

Conclusion*: Many cancer patients use various forms of CAM therapies because they believe that CAM therapies may be beneficial and are harmless.*

Key Words: *Complementary and alternative medicine, cancer, neoplasm, Saudi Arabia.*

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INTRODUCTION:

Cancer is a worldwide health problem. It is one of the leading causes of death. 8.2 million people die each year from cancer, an estimated 13% of all deaths worldwide. 70% increase in new cases of cancer expected over the next 2 decades [1].

Previous studies have shown that many cancer patients use CAM therapies worldwide both in under-developed countries and developed areas such as Europe, India, and the Arab countries [2-6].

Complementary/alternative medicine (CAM) can be defined as "a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine" [7], they vary from one society to another [8].

Patients with cancer often believe that they will eventually die from the disease, despite the availability of effective therapies; therefore, they tend to try anything that could be of benefit, and they seek hope through CAM therapies. One of the reasons patients use CAM therapies is because they obtain information about their disease and receive advice from not only their physicians but also equally from their communities and the internet [9-10].

Some patients believe that CAM therapies can effectively cure cancer or alleviate the adverse effects of chemotherapy and radiotherapy without producing adverse effects [10-11]. We opted to study CAM therapies because it is widely used and accepted by our society.

The aim of this study is to uncover several aspects of CAM therapies use among cancer patients at King Saud University-Medical City Oncology Center. We want to estimate the magnitude of using complementary/alternative medicine (CAM) therapies in cancer patients at KSUMC, determine types of CAM therapies and frequency of using, sources of information about CAM therapies, and figure out patients' beliefs about using CAM therapies.

MATERIAL AND METHODS:

This cross-sectional study was conducted among cancer patients at King Saud University-Medical City Oncology Center, Riyadh from September 2015 to April 2016. The sample size was calculated as 138 patients from a standard equation, $Z2\ \alpha\ P(1-P)/d2 = 1.962\ x\ .9\ x\ (1-.9)\ /\ .052 = 138.3$ While $Z\alpha = 1.96$, P is Proportion and d is precision. Proportion was taken from a previous research about patterns of CAM therapies in Riyadh. The inclusion criteria were as follows: male and female adult patients (18 years old and over), attendance at the oncology department for different types of cancer, Saudi and non-Saudi nationalities, and receiving and not receiving medical treatment. We excluded patients who did not know about their cancer diagnosis and those who did not respond. A convenience sampling method was used, which meant that the questionnaire was distributed among available patients without randomization. A pilot study was performed on 13 participants to test the questionnaire. Data were collected from the completed questionnaires and interviews were provided for patients who could not read or write. The study objectives and the significance of the questionnaire were explained in the introduction and all participants provided informed consent.

The questionnaire was divided into three variable sections:

1- Demographic data: gender, age, nationality, education, and income.
2- Disease characteristics: information about the patient's cancer and any chronic diseases.
3- Complementary/alternative medicine: types of CAM therapies used, reasons for its use or non-use, sources, and the patient's beliefs about CAM therapies.

Data were entered into and analyzed by the Statistical Package for the Social Sciences (SPSS) for personal computers, version 21.0, and analyses with p < 0.05 were considered significant. The chi-square test was used to determine whether there were significant associations between the categorical variables.

RESULTS:

We included 136 patients out of 138 (98.6%), we excluded 2 questionnaires due to lots of missing data. The demographic data are shown in Table 1. Nearly two-thirds of the patients were women. Most of the patients were over 50 years old and married. Types of cancer included breast in 33.8% and colon in 23.5%. Chemotherapy was the main cancer treatment for 93.1% of patients. The disease characteristics are shown in Table 2.

Of the 136 patients, 97 (71.3%) reported using CAM therapies, while 39 (28.7%) did not. The reasons given for not using CAM therapies were as follows: satisfaction with medical treatment (13 patients; 34.2%), CAM therapies was deemed not beneficial (5; 13.2%), not aware of CAM therapies (15; 39.5%), warned against using it (1 patient; 2.6%), fear of side effects (9; 23.7%), afraid that it could interfere with conventional treatment (14; 36.8%), and other reasons (3; 7.9%). There were no statistically significant differences between the users and non-users in terms of gender, age, nationality, marital status, or educational level (*p*>.05). The different

types of CAM therapies used and the frequency of their use are summarized in Table 3.

The most common types of CAM therapies used were Zamzam water (89.7%) and honey (82.5%). The most common sources of information about CAM therapies were family (50.5%) and friends (43.3%). All sources are shown in Figure 1.

Before using CAM therapies, 64 patients (68.8%) conducted their own research of the available information. The reasons given for using CAM therapies were to improve psychological/emotional well-being (44 patients; 45.8%), improve immunity (43; 44.8%), relieve the symptoms of cancer (35; 36.5%), control the disease (26; 27.1%), relieve the side effects of medical treatment (21; 21.9%), succumbed to pressure from friends/family (13; 13.5%), and other reasons such as CAM therapies being mentioned in the Qur'an and Sunnah, and because it is deemed harmless (21; 21.9%). Among the patients, 25 (26.3%) informed their physicians about their use of CAM therapies, while 70 (73.7%) did not. The reasons given for not informing the physicians were either the physician did not ask about CAM therapies use (45 patients; 63.4%), belief that CAM therapies is harmless (27; 38.0%), fear of being discouraged (7; 9.9%), forgot to mention it (2; 2.8%), and various other reasons (6; 8.5%). We also asked the patients whether their physicians had asked about their use of CAM therapies and only 11 patients (12.0%) reported that they had. CAM therapies use was reported to be of benefit by 67 patients (69.1%). The most frequently reported benefit was psychological well-being, while other reasons included increased immunity and less severe disease symptoms. Only 8 patients (8.2%) reported that they had experienced adverse effects, which included infections and flank pain, from using CAM therapies. In addition, 25 (27.2%) patients thought that CAM therapies could cause adverse effects, while 67 (72.8%) thought that it had no adverse effects.

DISCUSSION:

The prevalenc of cancer patients use CAM therapies around the world including in European countries, United States, India, Korea, Singapore and Arab countries, and the proportion ranges from 15–100% [2-6, 12-20]. A European study indicated that 35.9% of cancer patients in Europe use CAM therapies [3]. A study was conducted in Munich, Germany, 15.2% used CAM therapies during their oncological treatment. More than one third of patients used it in the past [12]. In United States showed that most of cancer survivors used vitamins/minerals or at least

one type of CAM therapies in the past year 78.8% [13]. Also, there was another study conducted in United States found 95.5% of participants used CAM therapies after 2 months of cancer adjuvant therapy [14]. A third study done in United States found the usage of CAM therapies was 61.3% [15].

In A study was done in Denmark, almost half of participants in the study (49.4%) used some CAM forms in the past month [16]. Also, a study conducted in Korea showed the prevalence in of 60.6% [17]. Another study conducted in southern Korea, 67% of participants, used CAM therapies [18]. The prevalence of CAM therapies use is 56% in Singapore and 34.3% in India [6, 19]. A Jordanian study showed that all cancer patients use CAM therapies (100%)[5]. In Saudi Arabia, a study conducted in Jeddah, the prevalence of CAM therapies use appeared to be only 21.6% [4], and other studies done in Riyadh showed rates of 69.9%, 90.5% [20,21]. The relatively high prevalence of CAM therapies use is due to cultural and religious influences especially in eastern regions of the world.

The most common type of CAM therapies used in our study was Zamzam water, which was followed by honey and Ruqya. Almost half of the patients used these types of CAM therapies daily. Herbs (turmeric, anise, and fenugreek), and camel milk with or without camel urine were used by a small percentage of the patients. In Denmark, respondents who consulted alternative practitioner, the most common therapies were massage, acupuncture, mindfulness/meditation, reflexology, and cranio-sacral therapy [16] . Two studies conducted in Germany, found that most patients use selenium, supplements, and relaxation techniques [2,9]. While another study, food supplements, vitamins/minerals, massage, physiotherapy/manual medicine, homeopathy and herbs/plants were the most used types [12]. In a study done in Alabama, United States the most common CAM therapies used were prayer and multivitamins. Other CAM types were massage, music therapy, meditation, drinking green tea, chiropractic treatment [14]. Additional study showed that vitamins and minerals, herbal and non- vitamins supplements were the most common types [13].

In Korea, most common types of CAM were exercise and yoga, ginseng, mushrooms, beans, multivitamins, prayer, meditation, and Zen [18]. While another study found that herbal medicine which includes red ginseng and mushroom, vitamins, acupuncture were the most used types [17].

In Jordan, the most frequently used types of CAM therapies were dietary and nutritional supplements including honey, olive oil, black seeds, and dates. In addition, a high percentage use Zamzam water and a quarter of the patients use herbs [5]. In Jeddah, more than half of the patients were reported to use herbs followed by Ruqya and Zamzam water [4], and in Riyadh, the most common types of CAM therapies used were religious like supplication, Quran recitation, Zamzam water, and reciting Quran over water. Among non-religious CAM therapies, olive oil was the most commonly used, followed by black seeds (Nigella sativa) [20].

Previous studies have shown that patients use CAM therapies for various reasons, for example, to improve their immunity/general health [2,10,12,13,19], alleviate adverse effects and complications due to the disease or conventional chemotherapy/radiotherapy [5,12,18,19], and to take control of their disease [5,9,13,18]. In our study, the most common reasons for CAM therapies use were to improve psychological/emotional well-being, improve immunity, and relieve the symptoms of the disease.

In our study, half of the participants obtained information about CAM therapies from their families and friends. This is almost the same proportion as that found in the Jordanian study [5]. Physicians, nurses, and the internet have been found to be the most common sources of information about CAM therapies in Germany [9,12]. In Korea 40.4% and Denmark 66.1%, was their own decision to use CAM therapies [16,18]. When we compared our study to others, we found that the types of CAM therapies and sources of information used in Germany differed from ours, but the types of CAM therapies used were almost identical across the Muslim countries such as Jordan and Saudi Arabia [9,4,5].

In a study, 53.7% discussed CAM therapies use with their oncologists or informed them about using it, while 46.3% did not [19]. In another one, more than half of participants didn't tell their doctors about CAM therapies use [16].

The reasons for not informing the physicians were CAM therapies was considered harmless and not a medicine, the oncologist did not ask about it, and fear of being discouraged [18,19]. In our study, the most common reason for not informing the physician about CAM therapies use was the physician did not ask about it.

The limitations of this study include the small sample size, which means we cannot generalize the findings for all patients with cancer who use CAM therapies. In addition, we used the convenience sampling method without randomization. The data on patients' beliefs were not reliable because the study was cross-sectional and there was no follow-up period, hence, we could not determine whether the adverse effects were from CAM therapies or the medical treatments. Similarly, we could not determine whether the benefits were derived from CAM therapies or from additional medications taken as part of the treatments.

CONCLUSION/RECOMMENDATIONS:
The prevalence of CAM therapies use was high among cancer patients at KSUMC. Many patients believed that they obtained benefits from CAM therapies and that there are no adverse effects. We recommend that an analytical study should be conducted on patients using CAM therapies to gain an understanding of any possible benefits or adverse effects.

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Table 1: Demographic data of the participants

Variables	Number of patients (%)	Users	Non user	Chi square value	p value
Gender				0.368	0.544
Male	47 (34.6)	32 (68.1%)	15 (31.9%)		
Female	89 (65.4)	65 (73.0%)	24 (27.0%)		
Age				5.102	0.277
≤ 20	4 (2.9)	4 (100.0%)	0 (0.0%)		
21-29	4 (2.9)	3 (75.0%)	1 (25.0%)		
30-39	14 (10.3)	9 (64.3%)	5 (35.7%)		
40-49	22 (16.2)	19 (86.4%)	3 (13.6%)		
≥ 50	92 (67.6)	62 (67.4%)	30 (32.6%)		
Nationality				0.172	0.678
Saudi	87 (64.0)	61 (70.1%)	26 (29.9%)		
Non Saudi	49 (36.0)	36 (73.5%)	13 (26.5%)		
Marital status				0.839	0.840
Single	13 (9.6)	10 (76.9%)	3 (23.1%)		
Married	100 (73.5)	69 (69.0%)	31 (31.0%)		
Divorced	9 (6.6)	7 (77.8%)	2 (22.2%)		
Widow/ Widower	13 (9.6)	10 (76.9%)	3 (23.1%)		
No answer	1 (.7)				
Educational level				2.630	0.854
None	30 (22.1)	22 (73.3%)	8 (26.7%)		
Less than primary	4 (2.9)	3 (75.0%)	1 (25.0%)		
Primary	13 (9.6)	11 (84.6%)	2 (15.4%)		
Intermediate	11 (8.1)	7 (63.6%)	4 (36.4%)		
Secondary	35 (25.7)	25 (71.4%)	10 (28.6%)		
University	34 (25.0)	24 (70.6%)	10 (29.4%)		
Higher degrees	9 (6.6)	5 (55.6%)	4 (44.4%)		
Monthly Income*				4.290	0.368
< 3000	43 (31.6)	35 (81.4%)	8 (18.6%)		
3000-8000	38 (27.9)	27 (71.1%)	11 (28.9%)		
9000-15000	33 (24.3)	21 (63.6%)	12 (36.4%)		
16000-25000	8 (5.9)	5 (62.5%)	3 (37.5%)		
>25000	4 (2.9)	2 (50.0%)	2 (50.0%)		
No answer	10 (7.4)				

*Income calculated by Saudi Riyals.

Table 2: Disease characteristics

Variables	Number of patients (%)
Chronic disease	
Yes	65 (47.8)
No	69 (50.7)
No answer	2 (1.5)
Type of cancer	
Colon	32 (23.5)
Breast	46 (33.8)
Leukemia	7 (5.1)
Lymphoma	6 (4.4)
Gynecological	6 (4.4)
Prostate	3 (2.2)
Other	27 (19.9)
No answer	9 (6.6)
Stage	
Stage 1	16 (11.8)
Stage 2	14 (10.3)
Stage 3	21 (15.4)
Stage 4	12 (8.8)
Do not know	70 (51.5)
No answer	3 (2.2)
Time since diagnosis	
< 3 months	12 (8.8)
3-6 months	36 (26.5)
7month - 1 year	45 (33.1)
2-3 years	17 (12.5)
>3 years	23 (16.9)
No answer	3 (2.2)
Treatment	
Chemotherapy	122 (93.1)
Surgery	46 (35.1)
Radiotherapy	29 (22.1)
Other	12 (9.2)
No treatment	3 (2.3)

Table 3: Types of CAM therapies and frequency

Type	Percentage	Frequency %			
		Daily	Weekly	Occasionally	Rarely
Ruqya	75.0%	56.9	9.7	27.8	5.6
Zamzam water	89.7%	50.6	9.2	34.5	5.7
Honey	82.5%	57.5	3.8	30	8.8
Black seed	54.6%	50.9	5.7	34	9.4
Herbs	19.6%	40	13.3	26.7	20
Vitamins	7.2%	50	0	16.7	33.3
Olive oil	62.9%	50.8	8.2	31.1	9.8
Dates	49.5%	60.4	4.2	29.2	6.3
Cinnamon	10.3%	20	0	50	30
Camel milk	17.7%	11.8	0	41.2	47.1
Camel urine	15.6%	13.3	0		60
Hijama	8.2%	0	0	12.5	87.5
Cauterization	1.0%	0	0	100	0
Other	18.8%				

(Figure 1) Patients' sources of information about CAM