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Complementary and Alternative Medicine Use among Cancer Patients in Iraq

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ABSTRACT: Complementary and alternative medicine (CAM) is becoming more popular among cancer patients, but they may be reluctant to inform their medical team about it. As a result, this study aims to determine the levels of CAM usage and the factors that influence its adoption among cancer patients. This cross-sectional study was conducted in three main hospitals in Iraq. The questionnaire consists of the socio-demographic profile, clinical characteristics of cancer, and CAM use. A one-way ANOVA and a Fisher exact test were performed after descriptive statistics were computed to identify the variables connected to the different CAM types that were utilized. The most popular forms of CAM were Quran recitation/water read upon Quran (80.1%), herbal treatment (10%), spiritual therapy/prayers (4.2%), black seeds and honey (3.8%), olive oil/Green tea (1%), and Zamzam wa.7%). The two most often mentioned reasons to use complementary and alternative medicine were to improve physical well-being and increase the body's ability to fight cancer (56.3% and 11.2%, respectively). Factors such as age, marital status, educational attainment, employment status, prior use of complementary and alternative medicine, family income, and the duration of cancer diagnosis were found to be associated with the use of CAM among cancer patients. Healthcare professionals must have frank conversations with their cancer patients about the use of CAM and consider the socioeconomic factors that are closely linked to CAM use. Furthermore, it is important to communicate with patients about CAM use's possible benefits and limitations based on current evidence.

Keywords: Complementary and alternative medicine; cancer; factors associated with CAM, Iraq.

I. INTRODUCTION

There is a global surge in the public usage of complementary and alternative medicine. Complementary and alternative medicine (CAM) has become more necessary because of dissatisfaction with current Western medication [1, 2]. CAM is described as a non-mainstream practice used in addition to modern medicine, whereas alternative medicine is defined by the National Center for Complementary and Integrative Health as a non-mainstream practice used in substitute of conventional medicine [3]. CAM is widely used worldwide, with regional, social, and spiritual beliefs all playing a role in how it is used [4, 5]

CAM is nonetheless practiced by the majority of people in low-income countries such as India, Africa, and Chile to tackle their primary healthcare needs [6]. In Korea, 54% used complementary and alternative medicine in the treatment of stroke [7]. Even in some countries, Canada, USA, and France, CAM use ranges from 42% to 70% [6]. Recognizing this, the World Health Organization created measures to aid in formulating proactive policies and placing action plans to enhance CAM practice's role in keeping people healthy [8].

One of the most popular forms of CAM is herbal therapy, which has been used for centuries in various cultures and traditions [9, 10]. One way to classify CAM treatments is by the mode of delivery, which can include nutritional, physical, psychological or a combination of these. Herbs and dietary supplements are examples of ingested substances used in nutritional therapies; on the other hand, acupuncture, massage therapy, yoga, and meditation are examples of various psychological and physical treatments [11, 12]. A study conducted in 33 nations revealed the existence of a diverse range of CAM used to treat cancer in both developed and developing countries [1, 13].

Cancer patients may favor CAM over chemotherapy and radiation therapy because they believe it to be safer. Although oncologists usually concentrate their patient discussions on specific aspects of the disease, alternative practitioners may be perceived by patients as compassionate and holistic in their interest in their well-being [14, 15].

For the majority of cancer patients, CAM therapy has emerged as the preferred course of treatment when it comes to modern medications or chemotherapy, which is notorious for having horrifying side effects. Numerous studies have found that cancer patients in both high- and low-income nations favor CAM. Green tea, homoeopathy, herbal therapy, diet, and massage were the most effective CAM modalities for cancer patients [1, 16].

Certain demographic factors seem to affect CAM use, as it is significantly more common in younger patients, women, and patients with higher levels of education [17]. In studies spanning all continents, 74% of participants reported using CAM to treat cancer, improve their quality of life, bolster the immune system, counteract the side effects of cancer treatment symptoms, and enhance cancer therapy's impact [18-21]. In Iraq, 31,502 new cases of cancer were reported in 2018, representing an incidence rate of 82.6/100,000 people; 43% of cases were in men and 57% in women. Lung cancer, bronchus cancer, and breast cancer were the top three cancers among men. Conversely, the top three malignancies in women were colorectal, thyroid, and breast cancers [22]. Despite Iraq's health care system predominantly focusing on modern medicine, traditional medicine treatments remain immensely famous among Iraqis [9, 23]. However, no previous studies investigated the use of CAM in Iraqi cancer patients. Therefore, it is crucial to determine the various CAM types used among Iraqi cancer patients and their associated factors.

II. METHODOLOGY

1. *PARTICIPANTS*

This study included 286 cancer patients who visited the tumor outpatient clinics at Medical City Radiotherapy and Nuclear Medicine Center, Kadhimiya Teaching Hospital, and Al-Amal National Oncology Hospital in Baghdad, Iraq. Both sexes of patients participated in the interviews, which took place on various days and times. Patients who used complementary and alternative medicine (CAM) were interviewed during their follow-up visit to gather data; those who did not use CAM were excluded. From early January 2020 to August 30, 2020, this study was conducted in three tertiary hospitals in Baghdad, Iraq. Participants consented before enrolling in the study, which was entirely voluntary. The inclusion criteria were adult cancer patients older than 20 years old, of both genders, having a cancer diagnosis, being aware of their cancer diagnosis, being able to understand the questions, and receiving treatment during the study period.

The Institutional Ethics Committees of the three hospitals—Medical City Radiotherapy and Nuclear Medicine Center, Kadhimiya Teaching Hospital, and Al-Amal National Oncology Hospital—approved the current study. Consent forms were signed and collected from all study participants. The World Medical Association's Code of Ethics (the 2004 Tokyo revision of the Declaration of Helsinki) was followed when conducting this study. Prior to the study, ethical approval was acquired from the Institutional Review Board (IRB) in every hospital.

2. *DATA COLLECTION*

A cross-sectional design was used, and the questionnaire was distributed to the study participants. All patients who met the inclusion criteria were invited to participate during the study period. Respondents were provided information about the study objectives and received agreement before participating. Participants were advised that they might opt out of the survey at any moment. The tool was a survey questionnaire written in a simple language previously used by Al-Naggar et al. (2013), and it was translated into Arabic to suit the patient's language and culture. Three sections made up the questionnaire: sociodemographic information, which included information on gender, age, religion, marital status, income, educational attainment, and employment status. Clinical characteristics included the type, stage, and duration of the cancer, as well as questions regarding treatment and CAM use, CAM type, CAM used prior to cancer diagnosis, reasons for using CAM, frequency of use, information source, efficacy of CAM use, CAM side effects, amount spent on CAM, and communications with a healthcare professional regarding CAM. Throughout the study period, receptionists at the three hospitals instructed patients who had cancer treatment or follow-up visits and were willing to participate to fill out an anonymous questionnaire in the waiting room. Some patients wanted to complete the questionnaire at home and bring it to their next visit.

3. *DATA ANALYSIS*

The analysis of the data was done with SPSS version 19. The mean and standard deviation were computed for continuous variables. Frequencies and percentages for categorical variables were calculated. To ascertain how the

different CAM types differed in terms of continuous variables, a one-way ANOVA was performed. The differences in categorical variables between the different types of CAM were ascertained using the Fisher exact test and the Chi-square test. A p-value of less than 0.05 was considered noteworthy.

III. RESULTS

The mean age of the 286 patients included in the study was 56.3 ± 10.8 years, with 42.7% being male. Most of the patients were educated up to high school (43.4%), were married (59.1%), and 49% worked full time. Patients with stage two were reported to be in 53.5%. The mean monthly family income among the participants was 599.1 ± 305.1 USD (Table 1).

Table 1. Socio-demographic characteristics of the cancer patients who used the CAM (n= 286)

Variables	Categories	N (%)
Gender	Male	122 (42.7%)
	Female	164 (57.3%)
Education level	Not educated	22 (7.7%)
	Primary	37 (12.9%)
	High School	124 (43.4%)
	College	92 (32.2%)
	University level	11 (3.8%)
Marital status	Single	53 (18.5%)
	Married	169 (59.1%)
	Divorced	27 (9.4%)
	Widowed	37 (12.9%)
Employment status	Employed (full-time)	140 (49%)
	Employed (on medical leave)	24 (8.4%)
	Self-employed	64 (22.4%)
	Retired	19 (6.6%)
	Housewife	39 (13.6%)
Religion	Muslim	280 (97.9%)
	Non-Muslim	6 (2.1%)

Breast cancer patients are the most common users of CAM (15.4%), followed by lung cancer patients (11.9%). However, brain, head and neck, nasopharyngeal, skin, and pancreatic cancer patients were the least common users of CAM (1.05%) (Figure 1).

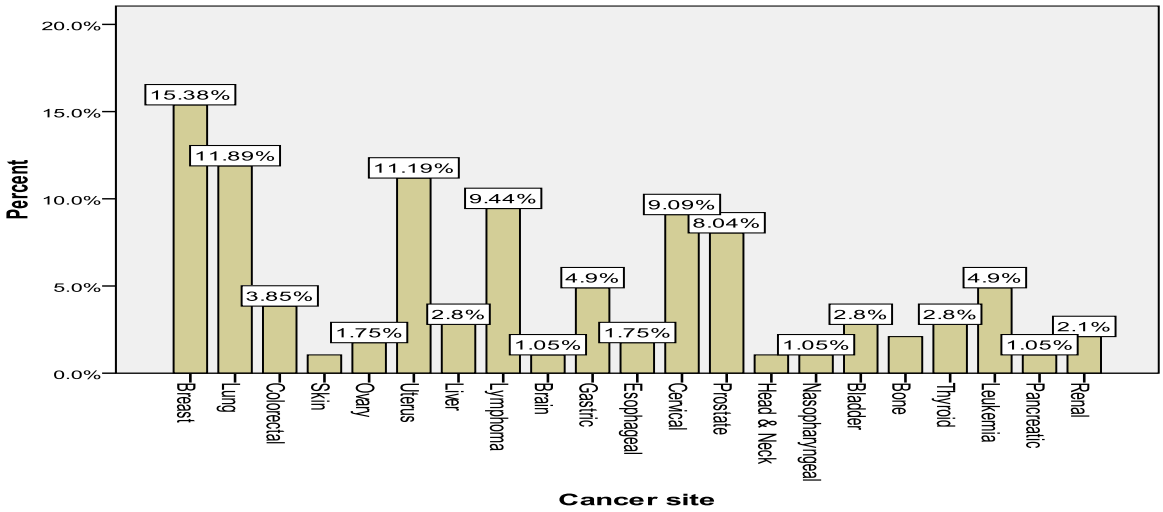

FIGURE 1. The frequency of CAM use in different types of cancer

The type of CAM used was Quran recitation/water read upon Quran in 80.1%, followed by herbal treatment in 10.1%. CAM was not used before the diagnosis of cancer in 81.5% of patients. The frequency of CAM use was daily in 90.6% of patients. 56.3% of participants said that the primary reason for using CAM was to strengthen the body's ability to fight cancer; 11.2% said they used CAM to promote physical well-being, and 11.2% thought it might help and could not hurt. Sources of information about CAM were friends for 45.8% of participants, family for 14.3%, and 62.9% of participants who felt uncertain about the effect of CAM. When asked about the side effects of CAM, 88.8% did not have any side effects. The mean amount spent on CAM in USD is approximately 228 per month. Regarding communication with healthcare professionals about CAM, 83.6% of patients had informed their doctors about their use of CAM (Table 2).

Table 2. Types and reasons for CAM use among cancer patients (n=286)

Variable		**N (%)**
Type of CAM	Quran recitation/water read upon Quran	
	black seeds and honey	229 (80.1%)
	Zamzam water	11 (3.8%)
	olive oil/Green tea	2 (0.7%)
	Herbal treatment	3 (1.0%)
	Spiritual therapy/prayers	29 (10.1%)
		12 (4.2%)
CAM used before diagnosis	Yes	53 (18.5%)
	No	233 (81.5%)
Reason for CAM use	To combat cancer directly	13 (4.5%)
	To boost the body's capacity to fight cancer	161 (56.3%)
	To enhance physical well-being	32 (11.2%)
	CAM Improve emotional well-being	2 (0.7%)
	Counteract ill effects from cancer or medical treatment	11 (3.8%)
	CAM might help, cannot hurt	20 (7%)
	To do everything possible to fight the cancer	32 (11.2%)
	Offer hope	15 (5.2%)
Frequency of use	Daily	259 (90.6%)
	Weekly	19 (6.6%)
	Occasionally	6 (2.1%)
	Only once	2 (0.7%)
Source of information	The media (TV, magazines, newspapers)	21 (7.3%)
	Internet	8 (2.8%)
	Friends	131 (45.8%)
	Family	41 (14.3%)
	Religious contacts	40 (14.0%)
	Practitioners of alternative therapy	30 (10.5%)
	Books	3 (1.0%)
	Other cancer patients	12 (4.2%)
Effect	No effect	77 (26.9%)
	Good effect	14 (4.9%)
	Moderate effect	12 (4.2%)
	Uncertain	180 (62.9%)
Side effect	Yes	5 (1.7%)
	No	254 (88.8%)
	Uncertain	27 (9.4%)
The patient informed the doctor.	Yes, because:	
	Doctor asked	12 (4.2%)
	Doctor should know	218 (76.2%)
	wanted to know the doctor's opinion	9 (3.1%)
	No, because:	
	The doctor did not ask	39 (13.6%)
	Doctor would disapprove	8 9 (2.8%)

Spiritual therapy/prayers as a CAM were used in significantly older patients compared to those using Quran recitation/water read upon Quran, Zamzam water, and herbal treatment (p=0.000). More women used CAM compared to men (p= 0.01). Concerning education level, the majority of those who used Quran recitation/water read upon Quran, Zamzam water, and olive oil/Green tea were educated till primary or high school; more of the black seeds/honey and herbal treatment users were educated at college and university level, while among those who used spiritual therapy/prayers, the majority were not educated (p< 0.001).

Married people used Quran recitation/water read aloud, black seeds/honey, Zamzam water, olive oil/green tea, and herbal treatments more frequently than widowers did. Widowers used spiritual therapy/prayers more frequently (p=0.003). In comparison to olive oil/green tea and spiritual therapy/prayers, which were used more by patients who were retired or housewives, more participants in the Quran recitation/water read aloud, black seeds/honey, Zamzam water, and herbal treatment groups were full-time workers or independent contractors (p= 0.01). The mean family income was significantly less in patients using spiritual therapy/prayers than in those using Quran recitation/water read upon Quran, black seeds/honey, and herbal treatment (p= 0.001).

All patients using Zamzam water and olive oil/green tea had a duration of disease of less than one year, compared to more patients with 1-2 years duration of disease in Quran recitation or water read upon Quran and herbal treatment group and > two years of disease in black seeds/honey and Spiritual therapy /prayers groups (p= 0.002). A higher percentage of patients using spiritual therapy/prayers as CAM had used CAM before the diagnosis of cancer, in contrast to more patients not having used CAM before the diagnosis of the disease among other types of CAM users (p= 0.001). The association of these factors with different types of CAM is shown in Table 3.

Table 3. Factors associated with various types of CAM used by cancer patients.

Variable	Quran recitation/ water read upon Quran (n = 229)	black seeds and honey (n = 11)	Zamzam water (n = 2)	olive oil/Green tea (n = 3)	Herbal treatment (n = 29)	Spiritual therapy/prayers (n = 12)	P-value
Age	55.3 ± 11.1	60.9 ± 5.5	45.0 ± 0.0	59.0 ± 0.0	57.5 ± 9.6	69.0 ± 1.9	0.000*
Gender							0.10
Male	107 (46.7)	3 (27.3)	0 (0)	0 (0)	9 (31.0)	3 (25)	
Female	122 (53.3)	8 (72.7)	2 (100)	3 (100)	20 (69)	9 (75)	
Education level							0.000*
Not educated	11 (4.8)	2 (18.2)	0 (0)	0 (0)	0 (0)	9 (75)	
Primary and high	138 (60.3)	3 (27.3)	2 (100)	3 (100)	12 (41.4)	3 (25)	
school	80 (34.9)	6 (54.5)	0 (0)	0 (0)	17 (58.6)	0 (0)	
College & University							
Marital status							0.003*
Single	44 (19.2)	3 (27.3)	0 (0)	0 (0)	6 (20.7)	0 (0)	
Married	138 (60.3)	6 (54.5)	2 (100)	3 (100)	17 (58.6)	3 (25)	
Divorced	24 (10.5)	0 (0)	0 (0)	0 (0)	3 (10.3)	0 (0)	
Widowed	23 (10.0)	2 (18.2)	0 (0)	0 (0)	3 (10.3)	9 (75)	
Employment status							0.01*
Employed (full-time) or Self -employed	165 (72.1)	8 (72.7)	2 (100)	0 (0)	26 (89.7)	3 (25)	
Employed (medical	21 (9.2)	0 (0)	0 (0)	0 (0)	3 (10.3)	0 (0)	
leave)	43 (18.7)	3 (27.3)	0 (0)	3 (100)	0	9 (75)	
Retired or Housewife							
Family Income in USD	613.9 ± 295.5	772.7 ± 560.5	500.0 ± 0.0	350.0 ± 0.0	587.9 ± 233.2	262.50 ± 22.6	0.001*

CAM use before							0.000*
diagnosis	38 (16.6)	3 (27.3)	0 (0)	0 (0)	3 (10.3)	9 (75)	
Yes	191 (83.4)	8 (72.7)	2 (100)	3 (100)	26 (89.7)	3 (25)	
No							
Duration of cancer							0.002*
< 1 year	77 (33.6)	3 (27.3)	2 (100)	3 (100)	6 (20.7)	3 (25)	
1-2 years	87 (38.0)	3 (27.3)	0 (0)	0 (0)	15 (51.7)	0 (0)	
>2 years	65 (28.4)	5 (45.4)	0 (0)	0 (0)	8 (27.6)	9 (75)	

*Statistically significant

IV. DISCUSSION

This study describes CAM use among cancer patients in Iraq by interviewing 286 cancer patients with oncology services across the three main hospitals in Baghdad. Socio-demographic and clinical characteristics variables were investigated to determine the impact of CAM use on different variables among cancer patients. Age, marital status, education level, family income, employment status, CAM use before diagnosis, and years since cancer diagnosis were significant deciding factors in the patient's use of CAM.

Regarding the source of information on CAM, the participants stated that friends (45.8%) were the most common source, followed by family (14.3%). The least used sources of information were the internet and books (2.8% and 1%, respectively), which could be because most cancer patients are elderly (mean age = 56.3 ± 10.8). It demonstrated that the overwhelming influence of family and friends influenced the patient's decision to take CAM. Another possible reason is that the internet is not available for everyone in Iraq due to politics and security instability within the country. According to previous research, friends and family members were the most popular sources of CAM information for breast cancer patients [24]; this might be taken positively because they employed a variety of information sources to make their health decisions. Healthcare professionals should inform patients about the use of CAM since they were less likely than friends and family to be the primary source of information about CAM. Research revealed that half of CAM-using breast cancer patients told their oncologist about their use of the treatment [25-27].

In this study, more females used CAM than men. It was previously reported that a Norwegian study conducted among cancer survivors showed women used CAM more than men [28]. Several studies were in agreement with our findings that CAM use was commonly associated with the female gender [17, 29]. Other studies found a significant relationship between CAM use and being female [1, 17, 28, 30]. The possible explanation is that women are more worried about health issues, use health services more frequently, and are more engaged in their health promotion.

The most commonly used types of CAM in this study were religious ones, where about 80% of the participants used Quran recitation or water read upon the Quran. This high percentage among our participants is mainly because most of them are Muslims. Supporting the similar results of other CAM use studies reported from Saudi Arabia (81.1%) [31], Palestine (69%) [32], Turkey (57.4%), [33], and Morocco (46%), [34], this is in line with a study that the most popular forms of CAM used for breast cancer were those of a religious nature [24]. Similar findings have been observed among patients, whose CAM includes herbal treatment [35]. It is also due to the family's beliefs about health that are firmly established in their culture and religious setting, such as a dislike of modern medicine, a preference for traditional medicine practiced for many generations, and a desire to avoid treatment with unpleasant side effects. This high rate of CAM utilization may be because their primary sources of CAM information are friends and family. Furthermore, clinicians' inability to explain these concerns contributes to the problem due to a lack of good information. This lack of information and patients' views frequently restrain mutual communication between professionals and patients.

This study found breast cancer patients are the most common users of CAM (15.4%), followed by lung cancer patients (11.9%), and then uterus cancer patients (11.2%). However, brain, head, neck, nasopharyngeal, skin, and pancreatic cancer patients were the least common users of CAM (1.05%). A similar conclusion was reported, in which the cancer distribution reflected the typical spectrum of patients encountered in oncology clinics, including breast and colorectal cancer [36]. The prevalence of CAM varies greatly among cancer patients, with differing

findings from our study in a European study. The cancers with the highest prevalence rates include pancreatic (56.3%), brain (50%), breast (44.7%), colon (32.7%), and head and neck (22.7%) [1]. The likelihood of a high prevalence in specific cancer types is due to quick physical deterioration, poor prognosis, and metastases. Patients may therefore lose hope in traditional therapies and turn to CAM to improve their quality of life.

In this study, the cancer patients' reasons for utilizing CAM were to support their bodies in fighting cancer (56.3%), and most of the cancer patients (90.6%) used CAM on a daily basis. Previous studies have also revealed that the most prevalent motivation is to improve the body's ability to fight cancer [37, 38]. However, the primary motive for using CAM use was to relieve physical and psychological distress in other studies [39, 40]. 'CAM may help, but it cannot hurt' - this was a sentiment reported by 11.2% of participants in this study. According to a Malaysian study by Al-Naggar et al. [41], the top reasons for using CAM were pain relieve (19.5%), symptoms relieve(16.5%), fight cancer (13.5%), physician suggestion (13.5%), family encouragement (10.5%), treat wounds after surgery (8.5%), relax (8.5%) and improve emotional well-being (2.5%). Studies among breast cancer patients found that they used CAM because they believed it could help them recover, heal, and improve their health [42, 43]. Additionally, one reason for embracing complementary and alternative medicine (CAM) was to lessen the side effects of traditional treatments [44, 45].

CAM has been shown in some studies to boost emotional wellness. According to these studies, the primary rationale for using CAM among breast cancer patient was to boost their sense of control [24, 39, 40]. According to some studies, the motivation for using CAM among breast cancer patients is to treat and cure cancer [30, 46, 47]. However, some studies found that the rationale for utilizing CAM is because of dissatisfaction with traditional treatment [48, 49], while others claim that the purpose was to support conventional treatment [47, 49]. A systematic review supported these findings, reporting that complementary and alternative medicine (CAM) practitioners had utilized CAM for a range of reasons, such as curing cancer, managing cancer-related symptoms, boosting immune function, improving physical and mental health, and due to the practical methods and affordability of CAM. [17]. Also, if CAM treatment has long been part of the culture, this increases trust in CAM providers. In this study, spiritual therapy/prayers as a CAM w utilized significantly more frequently among older patients than Quran recitation/water read upon Quran, Zamzam water, and herbal therapy. A similar study found that 62% of cancer patients used spiritual therapy/prayers for health [50]. The majority of patients use religion to help them cope with their illness, and evidence suggests that it is essential for oncologists to discuss spirituality with breast cancer patients [51, 52]. The daily five-times prayers, Doaa, Quran reading, Zamzam, water, Ruqia, and Sadaqah, are well-known spiritual healing practices among Arabic Muslims. Spiritual healing practices are not limited to Arabic Muslims. Spiritual activities are found in many major religions; for instance, Christians and Jews include blessings, meditations, reading of holy texts, laying on of hands amulets, and exorcism [53]. Praying was our patients' most commonly used CAM approach. This finding is consistent with previous studies on Muslim patients, which found that the majority of them used Islamic rituals [43, 50].According to a prior study, individuals who have deformity following surgery or who struggle with their sexuality may turn to spiritual or religious practices [54]. The recent study found that patients who oppose medical intervention are more likely to worship because they believe that everything happens for a purpose.

This study found a relationship between CAM use and age, years since cancer diagnosis, family income, education level, marital status, and employment status. Cancer patients' use of CAM is highly influenced by their educational level ($p= 0.001$).

Women with college degrees were three times more likely to use mental health services, five times more likely to seek alternative treatments, and twice as likely to use nutritional supplements as those with lower education levels [30]; this could be because patients with a greater level of education are more likely to be able to get relevant information about CAM and afford to purchase it.

According to the findings of this study, married women used CAM more than others. Quran recitation/water read upon Quran, black seeds, and honey, Zamzam water, olive oil/green tea, and herbal therapy were more commonly utilized by married people. A previous study found that having a high income and being married were associated with cancer patients' usage of CAM [24, 55]. Similar findings from previous research showed that married women used CAM more than single women [24], consistent with past research [1, 56]. In this study, patients who utilized spiritual therapy/prayers had much lower income than those who used Quran recitation/water read upon Quran, black seeds and honey, and herbal treatment. Other research has found that

higher income is related to CAM use among women [27, 57]. In previous studies, income appears to be related to CAM use, while patients with a high income used CAM more frequently [7, 58].

The limitation of this study is that the cross-sectional design used to measure CAM use among cancer patients more likely underestimated actual CAM use. In addition, patients' recall issues regarding their use of CAM during their treatment may influence the findings of this study.

V. CONCLUSION

The study demonstrates the common use of CAM, the most CAM used by cancer patients was water reading or reciting the Quran. The use of CAM is influenced by a number of factors, including education level, age, family income, marital status, employment status, and the length of their cancer diagnosis. It is important that medical professionals educate their patients about the possible benefits of therapies based on available data and have a conversation with them about the use of CAM. It is imperative for healthcare providers to engage in candid discussions regarding CAM use with their patients, taking into account the socioeconomic factors that are intimately associated with CAM utilization. Additionally, it is crucial to communicate with patients about the advantages of treatments based on the most recent evidence-based research.

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Author contribution

All authors made an equal contribution to the development and planning of the study.

Conflict of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data are available from the authors upon request.

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