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The use of complementary and alternative medicine among women with breast cancer in Saudi Arabia

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ABSTRACT

Purpose: The purpose of the study was to explore the frequency of use of complementary and alternative medicine (CAM) therapies among women with breast cancer in Saudi Arabia.
Design: A descriptive cross-sectional study design was used with face-to-face interviews using a structured questionnaire.
Sample: A convenient sample of 85 Saudi women with breast cancer who were undergoing cancer treatment was recruited from the Oncology Department of King Faisal Hospital, Jeddah, Kingdom of Saudi Arabia.
Methods: Using structured questionnaire "Use of Complementary Therapies Survey," consisted of diet and nutritional supplements, stress-reducing therapies, and other traditional treatments.
Result: Participants were predominantly married (76.5%), resided in an urban area (83.5%), unemployed (62%), and about half reported no income (49.4%). The mean age was 48 years. All participants reported using at least three or more CAM therapies (*mean = 21.15, SD = 8.85*) since their diagnosis. There were significant correlations between other CAM use and time since diagnosis ($r_s = -0.33$, $p < .05$). The highest usage of dietary and nutritional supplements occurred with honey, olive oil, antioxidants, Fennel flower seeds, and ginger. The highest stress reducing CAM techniques included reading the Holy Qur'ãn, and praying. For other traditional CAM therapies, positive thinking and relaxation techniques were the most frequent methods reported by women. Other CAM treatments involved ZamZam water and listening to music.
Conclusions: The use of complementary therapies among Saudi women with breast cancer is highly prevalent, with a predominance of interventions of religious background, indicating the strong influence of religion on peoples' lives, especially when people are faced with a life-threatening illness. The results of this study will guide future studies examining the efficacy of CAM on symptom management in Saudi Arabian women with breast cancer and other types of cancer.

1. Introduction

Breast cancer (BC) is the second leading cause of cancer related deaths and the most common type of cancer among women in Saudi Arabia (Ferlay et al., 2015). The recent data from Saudi Cancer Registry (n.d.-a, n.d.-b) stated that breast cancer was the most common cancer among females, accounting for 27.4% (5378 case) of all cancer cases, an increase from 25.1% in 2009 (SCR, n.d). The numbers of BC cases in the United States and Saudi Arabia are almost the same; however, in the United States, 50% of new BC cases occur in women over the age of 65, while in Saudi Arabia, 50% of the BC cases occur in women at the age of 52 or younger (SCR, n.d.-a, n.d.-b) and most are at advanced stages (Radi, 2013). In Saudi Arabia, there are many reasons for increasing BC cases, including environmental and hormonal factors, but the most notable one is low rates of breast cancer screening due to lack educational health awareness (El Bcheraoui et al., 2015). Therefore, due to BC prevalence among both young and older Saudi women, different health issues may be experienced by women living with breast cancer, including psychological and physical distress that may eventually affect their health related quality of life (HRQOL). For women with breast cancer who have been diagnosed and are living with the illness and receiving treatment, many stressful life events can impact their HRQOL domains of physical, psychological, social, and spiritual wellbeing (Bahrami, 2011; Bowling, 2005; Cella, 1994; King & Hinds, 2011). Unfortunately, symptom distress may unpleasantly affect their HRQOL. Hence, women with BC seek to manage their physical and psychological symptoms in order to improve their overall HRQOL using both medical and non-pharmacological methods, including complementary and

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alternative medicine (CAM).

The National Center for Complementary and Alternative Medicine (NCCAM) defines CAM basically "as a group of diverse medical and health care interventions, practices, products, or disciplines that are not generally considered part of conventional medicine" (National Center for Complementary and Alternative Medicine (NCCAM) 2015, p. 1). There are different reasons behind why patients with cancer are attempting to use CAM but the most common reasons are to improve their emotional and physical well-being (Fox et al., 2013; Humpel & Jones, 2006; Suzuki et al., 2013), to control symptoms related to the treatment/disease process (Mansky & Wallerstedt, 2006), and dissatisfaction with the regular conventional medicine (McLay, Stewart, George, Rore, & Heys, 2012). Moreover, the use of CAM by cancer patients is not uncommon and varies across populations. As the cases of cancer are increasing, the use of CAM has been increasing as well, nationally and internationally, among chronically ill patients, especially women with breast cancer (Greenlee et al., 2009; Naja et al., 2015; Pedersen, Christensen, Jensen, & Zachariae, 2009). Therefore, this study evaluated the use of CAM among a sample of women with breast cancer in Saudi Arabia.

There is a growing demand for CAM in western and eastern Mediterranean countries. The use of CAM by cancer patients in Saudi Arabia is estimated to be approximately 42% to 90.5% (Al-Faris et al., 2008; Al-Rowais, Al-Faris, Mohammad, Al-Rukban, & Abdulghani, 2010; Jazieh et al., 2012). Although Saudi Arabia, a part of eastern Mediterranean countries, has its own CAM practices, there is less documentation and evidence about their use by breast cancer patients. Other CAM approaches used by breast cancer patients are also unknown even though there is evidence about them being used by other breast cancer patients in western countries. Jazieh et al. (2012) conducted a descriptive, cross sectional study of 453 cancer patients in Saudi Arabia found that 90.5% of cancer patients sought further treatment from CAM practitioners and healers to control symptoms or as supportive treatments. Moreover, the majority of studies have focused on patients' perceptions of the use CAM therapy conducted in western countries, while few studies have focused on perceptions and practices of CAM use in cancer patients in non- western regions such as Saudi Arabia (Al-Faris et al., 2008; Jan, Basamh, Bahassan, & Jamal-Allail, 2009). The literature is varied in the prevalence, types, meaning of CAM use among breast cancer patients from different cultures.

2. Literature review

CAM practices have become universal worldwide. Based on the literature, CAM terms have been defined and used interchangeably and overlap across cultures as complementary, alternative, and integrative medicine. To help in clearly understanding the difference between these terms, the NCCAM established a standard definition when the diverse "CAM" remedies are used in combination with conventional treatment to support the health outcome and well-being, they are referred to be complementary. Although, when they are used instead of conventional treatments, they are considered to be alternative; integrative medicine combines the allopathic/medical approaches and CAM therapies under high quality scientific evidence of effectiveness and safety (NCCAM, 2015). A review of 26 surveys from 13 countries exhibited that the frequency of CAM use among cancer patients ranged from 7 to 64% (Ernst, 1998). The statistical variations among the studies may also be due to the fact that CAM may be defined differently in different areas and cultures', meaning what is viewed as CAM in one region may not be viewed as CAM in other regions (Vapiwala, Mick, Hampshire, Metz, & DeNittis, 2006). Different studies and surveys were conducted in China, Korea, and Japan to explore CAM use, specifically any practice related to traditional Chinese/Korean/Japanese medicine. In China, the results showed that nearly 40% to 76% of all health care physicians provided treatment to their patients with traditional Chinese medicine (Harmsworth & Lewith, 2001; Hesketh & Zhu, 1997; Park et al., 2012); 60% to 70% of the Japanese practitioners prescribed herbal medicine to their patients (WHO, 2002); and 69% of the entire Korean population utilized some traditional Korean medicine including herbal medicine, physical therapies and others (Lee, 2007). Thus, the use of CAM is a significant part of the culture.

Worldwide, patients with BC are more likely to practice CAM after their diagnosis compared to other cancer patients (Perlman et al., 2013). The numbers of women with BC who use CAM are higher compared to other types of cancer (Lengacher, Bennett, Kip, Berarducci, & Cox, 2003; McLay et al., 2012; Naja et al., 2015). In the United States, a prospective cohort study showed that the prevalence of CAM use by breast cancer patients has been estimated to be 86.1% (Greenlee et al., 2009). A survey carried out in 11 European countries showed that around 44.7% of women with breast cancer used some form of CAM (Molassiotis et al., 2006). More recently, several cross- sectional studies have shown that use of CAM among woman with BC was 57.4% in Korea (Kang et al., 2012) and 44.1% in Malaysia (Farooqui et al., 2016); in Germany, the rates were around 62.9% (Tautz, Momm, Hasenburg, & Guethlin, 2012), and about 87.5% of Australian women with breast cancer used at least one type of CAM (Kremser et al., 2008). In Saudi Arabia, there were only two studies conducted among cancer patients and CAM use. Both implemented a cross-sectional design, and one of the studies reported that out of 453 patients, 410 (90.5%) used some type of CAM, and 23.2% of those patients were women with BC (Jazieh et al., 2012). The other study by oncologist professor Sait et al. (2014) showed that out of 137 patients, only 28 (20.6%) of them practiced CAM, and the highest users were women with BC (26%). There are obvious variation rates between the two studies that may be due to an unrepresented sample of breast cancer patients and large numbers of refusal from potential participants in the second study, which is a threat to external validity. There is no study conducted to address CAM practice specifically among breast cancer population in Saudi Arabia.

These studies concluded that prayers/spiritual and herbal methods were preferred by women with BC. The focus of this study was to explore the frequency and types of CAM methods used by Saudi women with cancer. The research questions were:

- What is the frequency of CAM use among women with BC?
- What demographic and health-related variables are related to specific types of CAM use in women with breast cancer?

3. Method

3.1. Design, sample, & procedures

A cross-sectional, descriptive design was conducted in the oncology department at King Faisal Specialist Hospital and Research Centre (KFSHRC) in Jeddah, Saudi Arabia.

A convenience sampling technique was used. Eligibility criteria included: women (over 18 years of age); clinically diagnosed with BC at different disease stages and treatment protocols. Exclusion criteria were: cognitive impairment as evidence by not oriented to place, person, or time; patients who were actively dying; and patients who were unaware of their diagnosis. A representative sample size was sought, based on conventional power analysis due to a lack of data availability. A descriptive design was used with alpha = 0.05, medium effect size of 0.15, and a power of 0.80. This yielded a minimum sample size (N) = 85 subjects.

Following approval from the King Faisal hospital institutional review board (IRB) and the Case Western Reserve University IRB, the researcher introduced the study to medical and nursing staff in the oncology department and disclosed the inclusion and exclusion criteria. The medical and nurse oncologists provided a list of the patients and referred subjects to the researcher. The oncology staff then invited participants to speak to the researcher about the purpose of the study, who then obtained informed consent. The researcher interviewed each participant in a private room in the clinic. Patients required approximately 10–15 min to answer the questionnaire.

3.2. Measures

The modified Complementary Therapy Rating Scale (CTRS) by authors Akhu-Zaheya and Alkhasawneh (2012) consists of items grouped into three major subscales: diet and nutritional supplements (olive oil, barely water, energy drinks, ginger, royal jelly, milk, honey, vinegar, herbs, dates, fennelflower seeds, vitamins/minerals, special diet, antioxidants, and detoxification), stress-reducing therapies (prayer, reading the Holy Qur'an, religious classes, Hujama, and Ruqya-cure for illness via Qur'ān recitation), and other treatments such as traditional, massage, group therapy, positive thinking, relaxation techniques, cupping treatment, art, magic, and magnetic therapy. The survey contained a total of 28 items.

According to the authors the pilot study showed the reliability coefficient alpha was 0.79 with internal consistency after conducting the study at 0.85 (Akhu-Zaheya & Alkhasawneh, 2012).

3.3. Data analysis

Data was analyzed using Statistical Package for Social Science (SPSS) Windows version 17. Descriptive statistics appropriate to the level of measurement were used to describe study variables. To test relationships among personal characteristics, CAM use, and medical factors, Spearman's rank correlation coefficient test statistic was used to find the strength of association that occurs between two variables (Warner, 2008).

4. Results

From November 2016 to January 2017, a total of 91 women with BC were approached and invited to participate in the study. Five were excluded because they were unaware of their diagnosis. Only one subject from the total sample refused to participate due to lack of time. Therefore, the total sample size was 85 participants.

4.1. Demographic characteristics

All of the participants were female with a mean age of 48.15 years (SD = 10.16; range = 22–78). Most were married (76.5%), resided in urban area (83.5%), and unemployed (62%). Twenty-six (30.6%) had a college degree or higher. Table 1 shows the participants demographic characteristics.

Table 1
Demographic characteristics of the participants. N = 85.

Demographic characteristics	n (%)	Mean (SD)
Marital status		
Married	65 (76.5)	
Divorced	8 (9.4)	
Widowed	7 (8.2)	
Single	5 (5.9)	
Employment status		
Employed	25 (29.4)	
Unemployed	53 (62.4)	
Retired	7 (8.2)	
Education		
Unable to read or write	4 (4.7)	
Primary school	20 (23.5)	
Elementary school	12 (14.1)	
High school	17 (20.0)	
Some college	6 (7.1)	
College degree or higher	26 (30.6)	
Area of residence		
Urban	71 (83.5)	
Rural	14 (16.5)	

4.2. Medical characteristics

Most of the participants (37.6%) had been diagnosed with BC within 4 to 10 months, and 23.5% had been diagnosed less than three months. Thirty-three of the participants (38.8%) were diagnosed with stage IV, and 28 participants (32.9%) were diagnosed with stage III. Out of 85 women, 77 subjects (90.6%) had experienced prior breast cancer treatment. Thirty-six subjects (42.4%) received chemotherapy at the time of the interview. Also, the majority of the participants had a breast cancer surgery (77.6%). Table 2 presents the medical characteristics of the 85 subjects.

Table 2
Medical characteristics.

Characteristics	N	%
Stage of breast cancer		
I	4	4.7
II	20	23.5
III	28	32.9
IV	33	38.8
Current breast cancer treatment		
Chemotherapy	36	42.4
Hormonal therapy	18	21.2
Chemo-hormonal therapy	13	15.3
Radiation therapy	10	11.8
Radiation-hormonal therapy	5	5.9
Chemo-radiation	3	3.5

4.3. Prevalence of CAM use

All participants reported using at least three or more CAM therapies (*mean = 21.15, SD = 8.85*) since their diagnosis.

The most commonly used categories were stress-reducing techniques followed by dietary supplements. For diet and nutritional supplements category, 72 subjects (84.7%) had used honey, 62 subjects (72.9%) had used olive oil. These nutrients are essential for many Muslims, because they are mentioned in the Holy Qur'ān.

For the stress reducing techniques category, the majority of the participants 78 (91.8%) had practiced recitation of the Holy Qur'an, 72 subjects (52.9%) had used Islamic exorcism, and 68 subjects (52.9%) had performed prayers. For other traditional CAM therapies, positive thinking and relaxation techniques were the most frequent methods reported by participants: 76 subjects (89.4%) had used positive thinking and 35 subjects (41.2%) had performed relaxation techniques. In addition to the items listed in the survey, 66 subjects (77.6%) reported using other CAM methods such as drinking Holy water (Zamzam water), and listening to music. Sixty-four subjects (75.3%) had used Holy water, while only 2 subjects (2.4%) had used all three: Holy water, music, and dance Table 3 presents the most frequent CAM use among BC patients is presented.

Participants were asked to identify the reason for practicing or using each type of CAM therapy. The four main reasons were: to relieve physical symptoms and side effects, to relieve psychological stress, dissatisfaction with the medical treatment, and to gain over control of disease. First, participants were asked to recognize types of CAM therapies were used to relieve physical symptoms and side effects of the treatment or diagnosis. The most used category was diet and nutritional supplements, followed by use of other traditional medicine, and stress-reducing techniques. Secondly, participants were asked which CAM therapies they used to relieve psychological stress. The most frequently reported used category was stress-reducing techniques, followed by use other traditional medicine. The least frequently used category for relieving psychological stress was diet and nutritional supplements.

Table 3
Most CAM use among BC patients.

CAM use	N	%	Mean frequency use	Helpful
Dietary and nutritional supplements				
Honey	72	84.7	2.09	2.22
Olive Oil	62	72.9	1.75	1.80
Antioxidants	54	63.5	1.62	2.26
Fennel flower seeds	51	60.0	1.46	2.06
Ginger	47	55.3	1.33	2.15
Stress reducing techniques				
Recitation of the Holy Qur'an	78	91.8	2.48	2.87
Islamic exorcism	72	84.7	1.98	2.64
Performing prayers	68	80.0	2.25	2.91
Traditional CAM therapies				
Positive thinking	76	89.4	2.36	2.82
Relaxation techniques	35	41.2	0.94	2.71

Thirdly, participants were also asked which CAM therapies they used if they were experiencing dissatisfaction with conventional/medical treatment. A few participants chose this reason compared to the other reasons. The results showed if participants were dissatisfied with the medical treatment they mostly used diet and nutritional supplements. The minimum used CAM therapy was stress-reducing techniques as well as other traditional therapies. Finally, participants were asked if they used CAM therapies for feeling control over their disease; the participants' frequencies of responses were high for each category except for other traditional treatments.

4.4. Factors related to CAM use

Significant, weak, and positive correlations between royal jelly and time since diagnosis ($r_s = 26$, $p < .05$). Correspondingly, a statistically significant, weak positive correlation was found between camel milk and time since diagnosis ($r_s = 0.29$, $p < .01$); dates and time since diagnosis ($r_s = 0.24$, $p < .05$). Contrariwise, a significant weak negative correlation existed between special diet and time since diagnosis ($r_s = -0.23$, $p < .05$). Also, women who had higher use of special diet were likely younger ($r_s = -0.28$, $p < .05$), more educated ($r_s = 0.22$, $p < .05$), and with fewer treatment types ($r_s = -0.27$, $p < .05$).

5. Discussion

A few descriptive cross-sectional surveys have revealed that a considerable number of BC patients tend to use CAM since the time of the diagnosis and during treatment, including patients in Turkey (50%; Can, Demir, & Aydiner, 2012; Gul, Üstündag, & Andsoy, 2014; Gulluoglu, Cingi, Cakir, & Barlas, 2008; Kalender et al., 2014) and Lebanon (40% to 47%; Helyer et al., 2006; Naja et al., 2015). In this study, the prevalence of CAM usage among women with BC in Saudi Arabia was high. All the women reported using at least three or more CAM therapies. The results supported the previous two studies implemented in Saudi Arabia, which found that CAM usage was highly prevalent among women with BC. One of the studies reported that out of 453 cancer patients, 410 (90.5%) used some type of CAM, and 23.2% of those patients were women with BC (Jazieh et al., 2012). Consistently, another study conducted in Saudi Arabia showed that out of 137 patients, only 28 (20.6%) of them practiced CAM, and the highest users (26%) were women with BC (Sait et al., 2014). Moreover, the results from these studies, as well as the current study, were congruent with the large body of research confirming the prevalent use of CAM in women with BC worldwide. The findings of this study showed that the categories of the most frequently used CAMs were diet/nutritional supplements (97.6%), stress-reducing techniques (97.6%), and traditional CAM therapies (94.1%). These findings were surprising because 100% of the women in the sample had used some sort of CAM therapy. Islam, the predominant religion in Saudi Arabia, has been used as the primary explanation to illustrate this finding. Islam and Muslim culture generally influence the use of stress-reducing techniques and some nutritional supplements during sickness and treatment trajectory. The findings of this study showed that women with BC preferred using stress-reducing techniques and nutritional supplements over other methods, and this was consistent with previous studies conducted in the Middle East and worldwide. Most studies have found that herbal remedies were the most commonly used among cancer patients, followed by spiritual or religious methods (AlBraik, Rutter, & Brown, 2008; Al-Faris et al., 2008; Awad & Al-Shaye, 2014; Can et al., 2012; Elolemy & Albedah, 2012; Gul et al., 2014; Gulluoglu et al., 2008; Helyer et al., 2006; Kalender et al., 2014; Molassiotis et al., 2005; Naja et al., 2015; Sawalha, 2007).

Additionally, 75.3% of the women in this study had used holy water from the Well of Zamzam in Mecca to treat their illnesses or symptoms. This result was not surprising because Muslims have a strong belief in drinking water from the holy water to heal or relieve sickness. In this study, the most frequently used nutritional and dietary supplements reported were with honey, olive oil, antioxidants, Fennel flower seeds, and ginger. Most of these nutritional supplements are stated in the Holy Qur'an, and, hence, were the most commonly used among this study population. Likewise, a study implemented among Muslim Jordanian cancer patients reported that the most common methods of CAM usage encompassed nutritional supplements, reading the Qur'an, and holy water (Akhu-Zaheya & Alkhasawneh, 2012).

The mean age of women who used CAMs was 48 years. However, there were no significant associations between CAM items and age except for special diets. The results showed that women with BC who most frequently used a special diet were likely younger and more educated. Likewise, in a study that included different types of cancer, the results indicated that younger and more educated patients were more likely to utilize CAM (Kim et al., 2004). In this study, income was not related to CAM usage. However, a younger age, higher education, and higher income were associated with CAM usage among women with BC in numerous studies (Cassileth, Gubili, & Yeung, 2009; Garland et al., 2013; Wyatt, Sikorskii, Wills, & Su, 2010) Conversely, one study showed no significant association between CAM use, age, and level of education in cancer patients (Kalender et al., 2014).

Based on the findings of the current study, women with BC tended to use some methods of CAM, which significantly correlated with time since diagnosis. Correspondingly, the results in this study were consistent with the previous literature, time since diagnosis of cancer was significantly associated with CAM use (Bauml et al., 2015; Hwang et al., 2015; Wanchai, 2010). The study found that the longer time since diagnosis was associated with increased use of CAM. This indicated that time since diagnosis was an important clinical factor among BC patients and the consumption of CAM therapies. Also, these findings were also somewhat consistent with previous studies in that the authors found a positive association between the numbers of CAM therapies used and time since diagnosis (Akhu-Zaheya & Alkhasawneh, 2012).

6. Conclusion

The present study had several limitations that should be recognized. First, the study used a cross-sectional and correlational design that examined the association instead of cause and effect. Second, the selection of nonprobability convenience sampling did not represent the women with BC living in rural areas who were potential participants and, thus, limited the generalizability of the study findings. Third, the women in this study were recruited from only one institution, which also may decrease the ability to generalize the data. It would have been better to study a larger sample size across settings in different regions of Saudi Arabia would have been optimal.

7. Recommendations

Future studies should include more representative samples and a longitudinal design to describe the use of CAM throughout the trajectory of living with breast cancer. Also, interventional designs will be required to test the effectiveness of CAM therapies as symptom management strategies. Thus, it would be beneficial to understand how CAM therapies may improve physical and psychological aspects. Another recommendation would be to address the variety of CAM usage, such as the influence of religious, cultural, and spiritual beliefs on women's choice of CAM therapy. Addressing these questions may aid efforts to conduct future qualitative studies to acquire a clearer and better understand the lived experience of BC treatment and perspectives of CAM use.

Declaration of Competing Interest

There are no conflicts of interests to disclose.

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