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Depression and the use of complementary medicine among breast cancer patients

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Abstract This was a cross-sectional study to examine the association between anxiety, depression and quality of life and the use of complementary and alternative medicine. Anxiety and depression was measured using the Hospital Anxiety and Depression Scale (HADS), and quality of life was measured using the global quality of life subscale selected from the European Organization for Treatment and Research of Cancer (EORTC) quality of life core questionnaire (QLQ-C30). In all, 177 breast cancer patients were studied, and 32% ($n=57$) reported that they used or were using complementary medicine. Users and nonusers did not differ significantly in almost all variables studied, with the exception of duration of their diagnosis. The most commonly used complementary medicine was prayer and spiritual

healing ($n=45$, 73.8% of responses). Performing the logistic regression analysis controlling for age, marital status, educational level, knowledge of diagnosis, time since diagnosis, global quality of life, depression, and anxiety scores, the results indicated that the use of complementary medicine among breast cancer patients was associated with severe depression (odds ratio 2.49, 95% CI 1.06–5.89, P 0.04). The other variables studied did not show any significant results. The study findings confirm that the use of complementary medicine is more common among depressed breast cancer patients and might be a marker of greater psychological distress in this group of patients.

Keywords Complementary and alternative medicine · Breast cancer · Depression · Iran

Introduction

The use of complementary and alternative medicine is becoming increasingly common among cancer patients, especially breast cancer patients [3]. There is evidence that users of complementary medicine differ in some characteristics from nonusers; for example, reporting greater psychological distress and worse quality of life. Studies have shown that the use of alternative therapies among cancer patients in general and in breast cancer patients in particular was as-

sociated with depression, anxiety, fear of recurrence of cancer, and lower mental health [2, 4, 11]. This study sought to compare psychological distress between breast cancer users and nonusers of complementary and alternative medicine.

Material and methods

As part of a study on the use of complementary medicine among cancer patients in Iran, a survey of breast cancer

patients was conducted to examine the association between anxiety, depression, and overall quality of life and the use of complementary medicine. To indicate the use of complementary and alternative medicine, each patient was asked whether they had ever used or were using complementary and alternative medicine. If the answer was positive, then they were asked to identify therapies they had used or were using. Anxiety and depression was measured using the Iranian version of the Hospital Anxiety and Depression Scale (HADS) [10]. The HADS contains 14 items and consists of two subscales: anxiety and depression. Each item is rated on a four-point scale giving maximum scores of 21 for

anxiety and depression. Scores of 11 or more on either subscale are considered to be a significant “case” of psychological morbidity while scores of 8–10 represent “borderline” and 0–7 “normal”. Quality of life was measured using the global quality-of-life subscale selected from the European Organization for Treatment and Research of Cancer (EORTC) quality-of-life questionnaire, the EORTC QLQ-C30 Iranian version [9]. The global quality of life subscale contains two items, and each item is rated on a seven-point scale. A linear transformation was performed to standardize the row scores. Scores ranged from 0 to 100, and the higher values indicated a higher (better) level of global quality of life. To analyze data, descriptive statistics were obtained using the chi-square and *t* tests. In addition, logistic regression was performed to predict variables that contributed to the use of complementary and alternative medicine.

Table 1 Characteristics of breast cancer patients as users and nonusers of alternative and complementary medicine ($n=177$)

	Users ($n=57$) <i>n</i> (%)	Nonusers ($n=120$) <i>n</i> (%)	<i>P</i> value
Age (year)			
Mean (SD)	49.5 (15.1)	46.9 (14.7)	0.28
Range	19–81	18–80	
Educational level			
Illiterate/primary	39 (68)	88 (73)	
Secondary	11 (19)	25 (21)	
University	7 (12)	7 (6)	0.33
Marital status			
Single	5 (9)	15 (12)	
Married	47 (82)	92 (77)	
Divorced or widowed	5 (9)	13 (11)	0.67
Knowledge of diagnosis			
Yes	38 (67)	67 (56)	
No	19 (33)	53 (44)	0.17
Time since diagnosis			
1–6 months	22 (39)	69 (57)	
7–12 months	17 (30)	14 (12)	
>12 months	18 (31)	37 (31)	0.007
Anxiety score			
0–7 (normal)	17 (30)	43 (36)	
8–10 (borderline)	21 (37)	40 (33)	
11–21 (probable case)	19 (33)	37 (31)	0.73
Depression score			
0–7 (normal)	24 (42)	56 (47)	
8–10 (borderline)	11 (19)	34 (28)	
11–21 (probable case)	22 (39)	30 (25)	0.15
Global quality of life score			
Mean (SD)	55.7 (15.6)	54.3 (15.8)	0.58
Range	17–100	8–100	

Results

In all, 177 breast cancer patients were studied, and 32% ($n=57$) reported that they used or were using complementary medicine. Users and nonusers did not differ significantly in almost all variables studied, with the exception of duration of diagnosis (P 0.007). Characteristics of breast cancer patients as broken down into users and nonusers are shown in Table 1. The most commonly used complementary medicine was prayer and spiritual healing ($n=45$, 73.8% of responses). The frequency of complementary and alternative therapies used is shown in Table 2. Overall, severe anxiety and depression was reported by 32% and 29% of the patients respectively, and the mean global quality-of-life score was 54.7 (SD 15.7). Performing the logistic regression analysis controlling for age, marital status, educational level, knowledge of diagnosis, time since diagnosis, global quality of life, depression, and anxiety scores, the results

Table 2 Frequency of complementary and alternative therapies used by breast cancer patients ($n=57$)

	Number ^a	% of responses
Acupuncture	1	1.6
Bioenergy	7	11.5
Counseling	1	1.6
Prayer and spiritual healing	45	73.8
Homeopathy	2	3.3
Herbs	2	3.3
Sport medicine	1	1.6
Meditation	1	1.6
Yoga	1	1.6
Total	61	100

^aSince each patient could identify as many methods that they used, the total exceeds the total number of the users

Table 3 Result of logistic regression analysis. *OR* odds ratio, *CI* confidence interval

	OR (95% CI)	<i>P</i> value
Age ^a	1.01 (0.98–1.04)	0.43
Marital status		
Single	1.0 (ref.)	
Married	1.30 (0.37–4.47)	0.68
Divorced/widowed	1.01 (0.17–5.82)	0.99
Educational level		
Illiterate/primary	1.0 (ref.)	
Secondary	1.12 (0.49–2.69)	0.79
University	2.59 (0.77–8.65)	0.12
Knowledge of diagnosis		
No	1.0 (ref.)	
Yes	1.44 (0.71–2.92)	0.31
Time since diagnosis ^a	1.01 (0.99–1.01)	0.84
Anxiety score		
Normal/borderline (0–10)	1.0 (ref.)	
Probable case (11–21)	1.02 (0.41–2.05)	0.84
Depression score		
Normal/borderline (0–10)	1.0 (ref.)	
Probable case (11–21)	2.49 (1.06–5.89)	0.04
Global quality of life ^a	1.02 (0.99–1.04)	0.23

^aEntered into the model as continuous variables

indicated that the use of complementary medicine among breast cancer patients was associated with severe depression (odds ratio 2.49, 95% CI 1.06–5.89, *P* 0.04). The other variables studied did not show any significant results. The results are shown in Table 3.

Discussion

This study did not intend to evaluate the efficacy and safety of the complementary and alternative medicine but to report the present situation in Iran and to investigate the relationship between patients' psychological status and the use of complementary medicine. Although it is anticipated that in the future there would be a closer and more positive relationship between mainstream cancer care and nonconventional therapies [7], it is argued that the label "unproven" is inappropriate for such therapies, and it is time to assert that many alternative cancer therapies have been "disproven" [15].

The study findings indicated that prayer and spiritual healing was the most commonly used method of complementary therapies, and the other methods were used rarely. Considering the Iranian culture, one should make a distinction between spiritual healing and prayer as it relates to

complementary/alternative therapies, and spiritual practice and prayer that relate to one's religious duties. Based on one's wishes, the former could take several formal or informal practices whereas the latter can be defined as compulsory religious duties that one should practice every day or at special times. Another explanation for such observation might relate to cost consideration where other methods of alternative therapies could be regarded as expensive whereas patients do not have to pay for spiritual healing and prayer. To our knowledge, some forms of spiritual healing or prayer, such as going to shrines, is very expensive and thus this could not be the case. However, one might argue this is a true reflection of the patients' culture where prayer and spiritual beliefs are part of people's everyday life.

Thus it is possible to say that, unlike in Western countries, the use of common complementary therapies among Iranian breast cancer patients was rare. Most studies from Western countries have reported that a large proportion of breast cancer patients use at least one complementary and alternative therapy. e.g., [1]. Thus, as suggested, it is important that physicians and others involved in cancer patient care and management are informed and educated about complementary and alternative therapies and their use among their cancer patients [13].

Our study findings showed that with regard to the most variables studied, there were no significant differences between users and nonusers of complementary methods. Studies have shown that age and education are associated with the use of complementary medicine [6, 8]. However, after performing logistic regression, only depression was identified as a significant predicting factor. With regard to statistical significance for depression in multivariate analysis but not in bivariate analysis, one might argue that even in bivariate analysis (Table 1), the results indicated that users showed a higher proportion of probable cases of severe depression (39% for users versus 25% for nonusers). This is very similar to the findings from other studies on the topic, indicating that depressed breast cancer patients are more likely to use complementary medicine as compared to patients with normal psychological status [5]. Evidence suggests that users of alternative therapies receive less hope of cure from their physicians or show passive coping behavior [12, 14] and thus the use of complementary medicine among breast cancer patients associated with mental distress and depression [2, 11].

In conclusion, considering the study limitations, the results from this descriptive investigation suggest that the use of complementary and alternative medicine among Iranian breast cancer patients is unpopular. However, the study findings confirm that the use of complementary medicine is more common among depressed breast cancer patients and might be a marker of greater psychological distress in this group of patients.

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