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**Title:** Depression and health related quality of life in breast cancer patients

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**ORIGINAL ARTICLE**

# Depression and health related quality of life in breast cancer patients

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## Abstract

Objective: To investigate the prevalence of depression in women with breast cancer and relate it to their health-related quality of life.

Methods: The cross-sectional study was conducted at the Imam Khomeini Hospital in Iran between January and December 2009, and comprised 60 women with breast cancer with a mean age of 43.8±47.12 years. In order to assess the health-related quality of life, the study used the parameters of t he Iranian version of the Functional Assessment of Cancer Therapy for Breast Cancer. To identify expressive symptoms, the Beck Depression Inventory was used. General linear model regression and SPSS 14 were used to analyse the data.

Results: Significant differences in the prevalence of depression between treatment types was found. The presence of depression was significantly correlated with poorer overall health-related quality of life and the four subscales of the protocol. The patients reported statistically significant effects of depression in the overall category (p= 0.001). Participants with depression were more likely to have a poorer overall health-related quality of life, the exception being the social/family well-being subscale.

Conclusions: Depression affects health-related quality of life in breast cancer patients. Although further studies are necessary to confirm our findings, but our results emphasise the necessity for better mental health strategies for such patients.

Keywords: Breast cancer, HRQOL, Quality of life, Depression. (JPMA 63: 69 ; 2013)

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## Introduction

Although half of cancer patients report psychiatric disorders, especially depression, yet depression is often under-diagnosed in patients with cancer, and, consequently, under-treated. One of the most important reasons for such under-diagnosis is that depressive symptoms (such as sadness, fatigue and weight alteration) are often considered normal and expected consequences for the cancer treatment.[1-3] Various risk factors for depression have been identified in the pre- and post-treatment phases of breast cancer. Depression has been related to variables such as age,[4] educational status,[5] and treatment type.[6] Furthermore, depression has a negative impact on health-related quality of life (HRQOL), because it compromises the patient's ability to cope with the progress of the disease.[7] Diagnosis and treatment of depression is important because successful treatment can improve the quality of life.[8] HRQOL is a significant area of concern in the treatment of patients with cancer.[9] There are a number of published reports about HRQOL in cancer patients, and it is commonly recognised that HRQOL is a key factor in the overall health of these patients.[10]

The prevalence of depression varies in different populations, with some studies having reported it to be about 20%.[11-13] Two empirical reviews on the prevalence of depression have indicated that it is present in 10% to 25% or more of cancer patients, a considerably greater prevalence than in the general population.[13,14] Untreated depression can have significantly negative effects on selfcare and HRQOL in these patients. Thus, researchers expect that identification of risk factors for HRQOL will be helpful in directing intervention efforts in clinical oncology settings. Although previous studies have provided information on the potential negative effects of depression,[11,14,15] their results have been equivocal because of differences in cancer types studied or questionnaires used. No previous study has simultaneously evaluated the prevalence and correlates of depression or their relevance to HRQOL in breast cancer patients in Iran. Accordingly, the specific aim of this study was to examine the correlates of depression in relation to HRQOL among women diagnosed with breath cancer.

## Patients and Methods

The cross-sectional descriptive study covered all the referred breast cancer patients between January and December 2009. Sixty subjects met the inclusion criteria from among 71 subjects of the outpatient sections of the Clinical Oncology Department of the Imam Khomeini Hospital in Iran. All the participants signed a consent form approved by the Research Ethics Committee of the University's Faculty of Medicine. Eligible patients were Iranian women aged 18 years or more undergoing curative treatment through chemotherapy or radiotherapy. Those having difficulty in understanding the questionnaire; a history of psychiatric problems; and patients with other chronic diseases such as migraine or diabetes, were excluded.

The variables studied were age, income, marital status, educational level, employment status, family history of cancer, stage of disease, co-morbidity, duration of illness, type of current treatment, time since initial treatment, and type of surgery undergone. The Iranian version of the Functional Assessment of Cancer Therapy for Breast Cancer (FACT-B) was used to assess the participants' HRQOL. The scale included 36 items divided into five subscales: physical, emotional, social, well-being and breast cancer. Each item was rated on a five-point scale (0 = not at all; 1 = a little bit; 2 = somewhat; 3 = quite a bit; 4 = very much). Higher scores reflected a better functional status.[16]

We used the Beck Depression Inventory (BDI), which was originally designed to measure depression in mentally ill patients and evaluates 21 symptoms of depression. Each question is rated on a four-point intensity scale and total scores range from 0 to 63. Higher scores mean more severe depression. We used the following cutoff scores for the BDI: no or minimal depression, <10; mild-to-moderate depression, 10-18; moderate-to-severe depression, 19-29; and severe depression, 30-63. The Iranian version of the BDI has previously been validated.[17] A psychologist explained the questionnaires and aims of the study to the patients before the patients completed the self-reporting questionnaire.

Descriptive statistics were used to obtain means, standard deviations, frequencies and percentages. A general linear model (GLM) was used with 95% confidence interval to explore whether or not the degree of HRQOL showed considerable difference with the type depression. SPSS version 14.0 was used to analyse the data, and a p level <05 was considered significant.

## Results

Symptoms of mild-to-severe depression were found in 30 (50%) patients, regardless of education levels or demographic variables. There was no smoker or substance abuser in the sample. The mean age of the participants was 43.81±47.12 years. Eight (13%) patients

Table-1: Clinical and demographic data.

| Variables | Scores |
|---|---|
| Frequency | 60 (100%) |
| Age (mean±SD) | 43.81±47.12 |
| Duration (mean±SD) years | 3.64±3.98 |
| **Education** | **n (%)** |
| Literate | 37 (61.84%) |
| Illiterate | 23 (39.16%) |
| Elementary | 22 (60.2%) |
| High school and higher | 15 (39.8%) |

Table-2: Depression in overall and five domains of HRQOL using GLM.

| QOL | Beta | SE | T | P-value | 95%CI |
|---|---|---|---|---|---|
| Overall QOL | -13.219 | 2.999 | -4.407 | 0.001 | -19.131, -7.306 |
| Physical well-being | -2.863 | 1.188 | -2.410 | 0.013 | -5.206, -0.521 |
| Social/family well-being | 0.923 | 0.995 | 0.928 | 0.354 | 1.038, 2.885 |
| Emotional well-being | -5.523 | 0.788 | -7.008 | 0.001 | -7.076, -3.969 |
| Functional well-being | -2.058 | 1.014 | -2.030 | 0.029 | -4.057, 0.059 |

HRQOL: Health-related quality of life. QOL: Quality of life. GLM: General linear model.

were working, 9 (15%) had retired, and the rest were homemakers. In terms of education 37 (62%) were literate. The mean years since cancer diagnosis were 3.64±3.98 years (Table-1).

Depression had statistically significant impact on all variables of HRQOL. Participants with depression had significantly poorer overall HRQOL ($\beta = -17.77$, $p < 0.001$) and scored lower in all the four subscales ($p \leq 0.001$). Statistically significant effects of depression were reported in overall HRQOL ($\beta = -14.22$, $p < 0.001$), physical well-being ($p = 0.013$), emotional well-being ($p < 0.001$), functional well-being ($p = 0.029$) and breast cancer ($p < 0.001$). Participants with depression had poorer overall HRQOL except for the subscale of social/family well-being (Table-2).

## Discussion

We explored the prevalence and correlates of depression and their relationship with the HRQOL in women with breast cancer. The prevalence of depression was somewhat higher than that reported in previous studies.[13,14] This contradiction may be explained by the fact that women in the present study were younger (man age 43.81±47.12 year) than in previously reported studies, and younger patients report more depression than older patients.[18,19] Depression was significantly correlated with overall HRQOL and the four domains assessed by FACT-B, except for social/family well-being. Participants with depression experienced a poorer HRQOL. Our findings provide evidence that depression has effects on the physio-psycho-social health of patients undergoing cancer treatment.

Our study demonstrated that depression had a significant effect on HRQOL, and, importantly, psychological symptoms may decrease the efficacy of treatment in patients with breast cancer. This was in line with available literature.[20] Although the mechanism by which psychological distress changes the efficacy of the treatment is poorly understood, there is some evidence that psychological distress may cause stress, which alters the hormonal and neuronal balance and this, in turn, affects the biological activity of breast cancer cells.[21]

## Conclusion

Early identification of psychological symptoms and provision of effective symptom management may improve the effectiveness of cancer treatment. Caregivers should be more aware of the importance of depression assessment and pay more attention to diagnosing depression in high-risk groups of patients undergoing cancer treatment.


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