

EMOTIONAL DISTRESS IN WOMEN PRESENTING FOR BREAST IMAGING

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Background: The aim of this study was to assess anxiety and depression in a sample of women presenting for imaging of the breast following a clinical referral. Emotional distress in the women was also assessed in relation to demographic factors, reason for referral, presence of breast symptoms, type of imaging procedure performed, and self-reported pain and discomfort during imaging.

Patients and Methods: The study comprised 167 patients. The Hopkins Symptom Checklist-25 (HSCL-25) and a discomfort rating scale were used to assess emotional distress and discomfort or pain experienced during the imaging.

Results: While less than 10% of all subjects scored above psychiatric cut-off points for anxiety and depression, 25% and 20% reported significant distress associated with anxiety and depression symptoms, respectively. Education alone was associated with higher anxiety scores, while the presence of breast symptoms significantly increased depression scores and reports of specific nonsomatic symptoms of depression. Higher anxiety and depression scores were also associated with pain experienced during the imaging procedure.

Conclusion: Emotional distress may negatively impact women's experience of breast imaging. Screening for emotional distress is important within the context of breast imaging.

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Breast cancer is the most common cancer in women worldwide, with 900,000 newly diagnosed cases and 376,000 deaths each year.¹ With the demonstrated increase in survival rates due to early detection, the use of imaging for screening of breast cancer has become commonplace, and has engendered a significant body of research. One area that has received recent attention is the personal experience of breast imaging by women. Most studies indicate that screening for breast cancer may not increase emotional distress to psychiatric levels. However, there is evidence that emotional distress at the time of screening in some women remains elevated several weeks after the procedure.²

Emotional functioning in women presenting for imaging of the breast may be important to assess for two reasons. First, evaluating emotional distress at the time of screening may help identify patients at risk for developing future psychological problems. Second, emotional distress may increase the likelihood of the imaging procedure being negatively experienced by the patient (e.g., pain during the

procedure) and adversely affect the patient's use of subsequent health care. For instance, Loeken et al.³ reported an association between pain during mammography and worries about the next screening.

Understudied factors in emotional functioning in women presenting for breast screening include demographic features (e.g., age), reason for referral for screening, type of imaging used and the influence of emotional functioning on pain experienced during the imaging. The literature is also marked by a lack of focus on depressive symptoms in studies on emotional functioning in women presenting for radiological examination of the breast. Demonstration of an association between depression and inappropriate utilization of health care⁴ supports the systematic assessment of depression in women presenting for imaging of the breast.

Research on the personal experience of breast imaging has also been limited to Western countries, such as the U.S., U.K., and Australia, where voluntary screening programs are in place. Little data exist from countries where breast imaging is used predominantly for clinical and not for voluntary preventive care. For instance, despite the fact that breast cancer ranks high among cancers in women in Kuwait,⁵ there is virtually no research on women's experience of breast imaging in the country. The present study systematically assessed anxiety and depression in a sample of women presenting for imaging of the breast for a variety of clinical referral reasons. Emotional functioning

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in the women was also assessed in relation to demographic factors, reason for referral, presence of breast symptoms, type of imaging procedure performed, and self-reported pain and discomfort during the procedure.

Patients and Methods

One hundred and sixty-seven women presenting to the Radiology Department at the Mubarak Al-Kabeer Hospital in Kuwait between December 1997 and May 1998 volunteered to participate in the study. This represented approximately 85% of all women presenting to the department for breast imaging during the study period. Subjects ranged in age from 14 to 63 years. Just under half (42%) were Kuwaitis and the rest were mainly of Asian and Arab origin. Most subjects had at least a secondary or high school education (81.6%). Most subjects were referred with one or more breast symptoms (90%) and the rest were referred by clinicians for pre-hormone replacement therapy evaluations, or due to family history of breast cancer. Symptoms prompting a referral for imaging included breast pain (49.2%), breast lump (42.9%), and discharge from the nipples (10.3%). Thirteen percent of the women reported both breast lumps and pain. Most subjects (72.8%) completed both a mammogram and a breast ultrasound, 9.8% had only a mammogram, and 17.4% completed a breast ultrasound only. Women were asked to collect their report after two days and follow up with their physician for further work-up.

Emotional functioning was assessed using the Hopkins Symptom Checklist (HSCL),⁶ a 25-item self-reporting scale originally developed in the United States, that has been adapted for use in different languages, including Arabic.⁷ The HSCL assesses symptoms of anxiety and depression within the context of the degree of distress caused by these symptoms within the past week. Subjects' responses to each item are scored according to the degree of distress reported (0 = not at all; 1 = a little bit; 2 = quite a bit; and 3 = extreme), and averaged to provide an anxiety and a depression score that can range from 0 to 3.00. Subjects' experience of the imaging procedure was assessed by use of a discomfort rating scale commonly used in the pain literature.⁸ This rating scale was used to group each

subject's experience of the procedure into the following categories: neither uncomfortable nor painful; uncomfortable but not painful; and painful.

Data were analyzed by using Statistical Package for Social Sciences (version 7.5). Non-parametric tests were used for comparative analyses with anxiety and depression scores as dependent variables. The Mann-Whitney U-test was used to compare mean scores for groups of 2 (e.g., presence versus absence of breast symptoms). When mean scores of three or more groups were compared, the Kruskal-Wallis test was employed. The association of anxiety and depression scores with pain experienced during imaging, clinical referral reason, breast symptoms and education level of women were analyzed.

Results

The percentages of women reporting different degrees of overall distress associated with symptoms of anxiety and depression are shown in Table 1. Combining the two groups of patients suffering from moderate and extreme symptoms (Table 1), 25% and 20% of women reported at least moderate overall distress associated with anxiety and depression symptoms, respectively. Using conservative cut-off scores of 1.75%, 7% and 6.2% of all subjects were found to report psychiatrically significant levels of anxiety and depression that are associated with psychiatric disorders. Research on the HSCL with non-U.S. populations suggests use of lower cut-off scores to delineate clinical levels of emotional distress, particularly in non-psychiatric settings.⁹ Use of a lower cut-off score of 1.50 resulted in 13% and 12.5% of all the subjects being classified as anxious and depressed, respectively. Extremely high levels of anxiety and depression were infrequently reported (6% for anxiety and 1% for depression; see Table 1). A positive, moderate correlation was obtained between anxiety and depression scores ($r=0.60$, $P<0.01$), suggesting that while there was an overlap in symptoms, the anxiety and depression items measured different aspects of emotional distress.

Associations between HSCL scores and demographic factors, presence of breast symptoms, clinical referral reasons, type of imaging, and experience of the procedure (pain or discomfort) were assessed using a series of non-parametric analyses. Table 2 summarizes significant findings for these analyses. No differences were found for anxiety and depression scores based on age or nationality. However, women with high school or some college education obtained significantly higher scores compared to women with less than high school education and women with full college education or more. No differences were found in anxiety scores based on whether the subject was referred with symptoms or not, nor were any type of breast symptoms associated with higher levels of anxiety.

In contrast, depression scores were found to be associated with the presence of breast symptoms. Women

TABLE 1. Percentage of patients reporting different overall degrees of anxiety and depression symptoms.

Symptoms	Anxiety	Depression
None or insignificant (HSCL <1.00)	60%	69%
A little bit (HSCL 1.00-1.25)	15%	11%
Moderate (HSCL 1.26-1.99)	19%	19%
Quite a lot to extreme (HSCL >1.99)	6%	1%

HSCL=Hopkins Symptom Checklist.

referred with breast symptoms, compared to women with no symptoms, reported a higher level of depression and more often reported quite a bit or extreme distress associated with specific symptoms of depression, such as poor appetite (25% versus 11%), lack of interest in things (33% versus 3%), and feelings of worthlessness (25% versus 6%). Both anxiety and depression scores were associated with pain experienced during the imaging procedure. Specifically, women reporting pain during the procedure obtained higher anxiety and depression scores as compared to women who reported discomfort only and to those reporting neither pain nor discomfort. Clinical referral reason, type of breast symptom, and type of imaging procedure were associated with neither anxiety nor depression scores.

Discussion

Findings of this study indicate that one in four women experiences a moderate level of distress associated with symptoms of anxiety and one in five women reports symptoms of depression. Comparison of this study's findings with community prevalence of psychiatric morbidity in other Arabian Gulf countries¹⁰ suggests that the prevalence of emotional distress in women presenting for imaging is no higher than that in the community at large. Overall, the present findings support previous reports² that indicate that imaging of the breast by itself is not associated with increased psychiatric morbidity.

Over 10% of all women presenting for breast imaging reported significant anxiety and depression. When clinicians identify significant distress they may not offer treatment as they may see the distress as a "normal" reaction to illness. The association found for emotional distress with pain during breast imaging and previous reports on the endurance of emotional distress suggest that any emotional distress, even if not of psychiatric significance, is important to assess. If women experience pain during imaging, they may be more likely to be emotionally distressed at time of follow-up imaging, thereby increasing the risk for non-compliance with follow-up care. Emotional distress may thereby mediate the relationship of pain and increased likelihood for non-use of follow-up radiological breast examinations that is documented in the literature.¹¹

This study also supports the need to routinely assess anxiety and depression as separate factors of emotional distress. Women with high school or some college education obtained significantly higher anxiety scores compared to women with less than high school education or women with full college education or more (Table 2). While anxiety was associated with education only, depression and specific symptoms of depression were found to be associated with the presence of breast symptoms. Screening women for depression at the time of

TABLE 2. Comparative analyses using HSCL anxiety and depression scores as dependent variables (significant findings only).

Variable	Mean±SD	Test used	P-value
HSCL anxiety score			
Education		Kruskal-Wallis	<0.01
Less than high school	0.73±0.58		
High school or some college	0.95±0.53		
College or more	0.64±0.46		
Pain during imaging		Kruskal-Wallis	<0.05
Neither pain nor discomfort	0.70±0.54		
Discomfort only	0.78±0.48		
Pain	0.99±0.49		
HSCL depression score			
Pain during imaging		Kruskal-Wallis	<0.05
Neither pain nor discomfort	0.65±0.49		
Discomfort only	0.77±0.55		
Pain	0.94±0.44		
Breast symptom status		Mann-Whitney U.	<0.05
Symptoms present	0.81±0.52		
No symptoms	0.63±0.56		

imaging may help identify those at risk of developing depression. Psychiatric literature indicates that depressive symptoms, even when below clinical cutoffs, predict future psychiatric disorders, largely because they represent a chronic vulnerability.⁴

Depression, in particular, has been demonstrated to negatively affect patients' use of health care.⁴ Women who are depressed may present future management difficulties, as they may express the emotional distress somatically and underreport depression symptoms. Depression may be particularly important to assess systematically since Arabs are more likely to express depression somatically¹³ and may not report emotional distress voluntarily due to stigma against psychiatric intervention. In this study, women with breast symptoms were more likely to report depression than women with no symptoms. Given that symptomatic women are more likely to return for clinical care and follow-up radioimaging, the importance of identifying patients at risk of developing problems with depression cannot be overstated. That women with symptoms were also more likely to report specific non-somatic symptoms of depression, such as lack of interest and feelings of worthlessness, suggests that identification of depression, distinct from somatic effects of physical illness, can be achieved by careful assessment.

One in four women in this study reported at least a moderate level of overall distress related to symptoms of anxiety. Several factors could increase anxiety in women presenting for breast imaging. Patients may not understand the procedure, or they may fear receiving a diagnosis of cancer, or they may fear that the procedure itself will be painful. A New Zealand study found that women who were not aware of the uses of mammography were more anxious compared to women who were informed about the

procedure.¹⁴ Similarly, differences found in our study in reported anxiety between women with high school or some college education, and women with full college education, may reflect differences in knowledge and understanding of imaging and related procedures. Implementation of anxiety management procedures, such as explaining the nature and purpose of the imaging procedure, using relaxation techniques such as distraction and visual imagery, etc., will decrease the likelihood of the imaging being negatively experienced and reduce patient non-compliance with subsequent clinical and radiological evaluations. Indeed, satisfaction with treatment received and psychological intervention have been associated with lowered levels of anxiety and depression.¹⁵

The present study is the first of its kind conducted in a developing country with a heterogeneous sample of women, and extends findings of previous investigations by exploring the associations between emotional distress and referral reasons, presence of symptoms, types and experience of imaging procedures.

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