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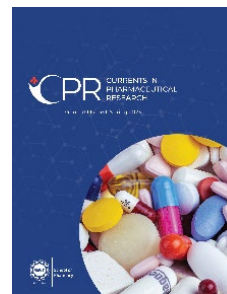
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- Author (s):** Tanbeela Perveen¹, Rabbia Jawad², Iqra Afzal¹, Noreen Iftikhar³, Bushra Aslam¹, Rabia Najeeb¹, Abida Nasreen¹
- Affiliation (s):** ¹The University of Faisalabad, Faisalabad, Pakistan
²School of Biological Sciences, University of the Punjab, Lahore, Pakistan
³Center of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan
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Prevalence of Depression, Anxiety, and Stress among Breast Cancer Patients at a Tertiary Care Hospital in Faisalabad, Pakistan

Tanbeela Perveen^{1*#}, Rabbia Jawad^{2#}, Iqra Afzal¹, Noreen Iftikhar³, Bushra Aslam¹, Rabia Najeeb¹, and Abida Nasreen¹

¹School of Nursing, The University of Faisalabad, Faisalabad, Pakistan

²School of Biological Sciences, University of the Punjab, Lahore, Pakistan

³Center of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan

ABSTRACT

The prevalence of depression in the patients of breast cancer is very common. The diagnosis of cancer produces stress, anxiety, and fear of pain and death in patients, all of which affect their physical and emotional wellbeing. These factors hinder the treatment of cancer because patients lose their will to live a happy and healthy life. The quality of life of people with psychiatric symptoms remains poor. Furthermore, there is a considerable risk that depressive symptoms in patients with breast cancer can lead to physical impairment and prolong mortality. The current descriptive and cross-sectional study was designed to determine depression, anxiety, and stress (DAS) levels in breast cancer patients at a tertiary care hospital in Faisalabad, Pakistan. The questionnaire included the socio-demographic, disease, and DAS related questions. A total of 138 women with breast cancer were included. The data was analyzed using SPSS software. The results showed that 38% of women had extremely severe depression, 68% were suffering from extremely severe anxiety, and 34% were facing extremely severe stress. The study showed that different factors were affecting the DAS scale, such as illiteracy (46.40%), occupation (labour 60.90%) and low income (76.80%) of husbands, sad reaction of families (60.10%), and the fear of chemotherapy (44.20%). Cancer patients need special attention and treatments to avoid emotional distress during their disease journey. This current study helps the healthcare professionals to provide psychological treatment to these patients.

Keywords: anxiety, breast cancer, depression, stress, women

*Corresponding Author: BSRN-FA20-020@tuf.edu.pk

#Both author contributed equally

1. INTRODUCTION

Women of all ages face the issue of breast cancer, globally. Breast cancer is the most common cancer among all types of cancers and the major cause of death among women in developing countries. It is a complex disease which may develop due to several reasons, such as hormonal, environmental, genetic, and because of the way of living of an individual [1]. Many studies reported that the chance of breast cancer increases with the increase in age and it is more common in women rather than men. The prevalence of breast cancer is higher in women due to the presence of breast tissues and hormonal imbalance. Hormones have an important role in the reproductive cycle of women, especially [2]. The hormones progesterone and estrogen regulate the menstrual cycle among women. These hormones have a considerable influence on breast cancer in case of earlier menstrual period or late menopause. It has been reported that the chance of breast cancer increases in women who have previously been diagnosed with this cancer or any other breast related disease [3, 4].

The majority of women suffer from breast cancer due to the prevalence of various psychological issues, such as depression, anxiety, and emotional stress. These conditions can affect the well-being and quality of life of a person who suffers from cancer. Genetic heritage can be another major reason for breast cancer; however, the most common cause is depression observed in many breast cancer patients, since the time of diagnosis till the end of treatment [5, 6]. Anxiety attacks are 10-30% prevalent among the people of several ages but are more frequent in cancer patients due to the fear of disease, sense of confusion about future, discomfort of health seeking, and treatment consequences [7].

There are different factors which contribute to the prevalence of depression and anxiety among breast cancer patients. The shock and grief associated with cancer diagnosis leads to emotional stress. Even after the completion of treatment, there is always a fear of cancer recurrence among patients [8, 9]. Further, the consequences of radiotherapy, chemotherapy, and other medications disturb the physical health and self-confidence of patients. There are several other factors, such as financial concern about medical cost and potential loss of income during the course of disease which have an adverse impact [10, 11].

The treatment of psychological distress is very important, especially for cancer patients. Otherwise, it would leave a negative impact on the mental and physical health of the patients [12]. Depression, stress, fear, and anxiety can weaken the immune system of cancer patients and reduce their quality of life, even after proper treatment and cure [13]. These factors may become the reason of the slow recovery of patients and sometimes lead to the higher rate of mortality in any population. The patients with depression and anxiety are not able to communicate with their surroundings [14, 15]. Hence, this research aims to assess the prevalence of anxiety, depression, stress, and fear among the patients of breast cancer and to identify the factors which increase the risk of their symptoms among these patients.

2. METHODOLOGY

The current study was designed as a descriptive and cross-sectional study, carried out in a tertiary care Madina Teaching Hospital, Faisalabad, from February 2022 to May 2022. Samples of one hundred and thirty-eight (138) Pakistani women were collected using convenient sampling method. The inclusion criteria included women (older than 20 years) diagnosed with breast cancer, while the exclusion criteria were the patients suffering from all other types of cancers.

2.1. Questionnaire

A questionnaire was made to collect the data for this study. It contained the information of the participants including their demographic characteristics (current marital status, years of education, income of husband, occupation of husband, and age). The questionnaire was designed after an extensive literature review. Disease-related data of the participants were collected. The questions were related to the therapies (radiotherapy and chemotherapy) and the reaction of the husband and other family members after knowing about the disease. Depression, anxiety, and stress (DAS) related questions were also included in the questionnaire.

2.2. Procedure

Ethical approvals were taken from the institutional board. Before starting the study, written consent of the patients was also obtained. The interviews of the participants were conducted separately in a room. The researchers explained briefly the objective of the study to the invited participants in an understandable language. Women were assured that their responses would remain anonymous and that their privacy would be

maintained. All the women filled out the questionnaire by themselves. After completing it, they received the pamphlet on breast cancer and the behavior of breast cancer patients.

2.3. Data Analysis

Sample size was calculated by using Roasoft software. According to this software, 28.7% was the estimated proportion of the population calculated for the study (WHO Globocan Statistics Report 2020, Pakistan). The absolute error was 5%, the confidence level was 95%, the response distribution was 10%, and the total sample size was 138. SPSS software (23rd version) was used for statistical analysis and descriptive statistics were calculated. Frequency table were formed with different variables and percentages.

3. RESULTS

3.1. Demographic Data

The demographic data of the participants includes different variables and their frequency (n) and percentages (%), as shown in Table 1. The analysis showed that the women were between 41-50 years of age 56 (40.6%). Further, 133 (96.4%) women were married, 64 (46.4%) were illiterate, the occupation of the husband was labor 84 (60.9%), and the monthly income of the husband was between 21-30 thousand 106 (76.8%).

Table 1. Demographic Data of Women with Breast Cancer

Variables	Frequency (n)	Percentage (%)
Age in years _____?		
21-30 years	6	4.3%
31-40 years	24	17.4%
41-50 years	56	40.6%
51-60 years	52	37.7%
Marital status _____?		
Married	133	96.4%
Unmarried	2	1.4%
Widow	3	2.2%
Education _____?		
Illiterate	64	46.4%
Matric	51	37.0%

Variables	Frequency (n)	Percentage (%)
Bachelors	16	11.6%
Others	7	5.0%
Occupation of husband_____?		
Labor	84	60.9%
Govt. servant	28	20.3%
Businessman	18	13.0%
Nothing do any job	8	5.8%
Monthly income of your husband____?		
0	5	3.6%
21-30 thousand	106	76.8%
31-40 thousand	9	6.5%
41-50 thousand	9	6.5%
Above 50	9	6.5%

3.2. Disease-related Data

The data related to the disease includes the feelings of women after the diagnosis of breast cancer. It showed that 100 women (72.5%) were disappointed, 113 (81.9%) got their husband's support, 103 (74.6%) women were disappointed due to the side effects of chemotherapy, 83 (60.1%) women expressed that the reaction of the family was sad, 70 (50.7%) expressed that families felt hope for the best after the diagnosis, and 61 (44.2%) women were depressed after chemotherapy-induced peripheral neuropathy. The data is shown in Table 2.

Table 2. Disease-related Data of Women with Breast Cancer

Variables	Frequency (n)	Percentage (%)
What did you feel when you are diagnosed with breast cancer?		
Disappointed	100	72.5%
Prepare yourself for acceptance	38	27.5%
What was your husband's impression when he came to know that you are diagnosed with breast cancer?		
0	5	3.6%
Supportive	113	81.9%
Distracted	20	14.5%

Variables	Frequency (n)	Percentage (%)
What did you feel when you see the side effects of chemotherapy or radiotherapy (loss of hairs)?		
Disappointed	103	74.6%
Acceptance	35	25.4%
How did your family or others react when they came to know that you have breast cancer?		
Shocked	35	25.4%
Sad	83	60.1%
Hopeless	20	14.5%
What did you feel when you were admitted in the hospital and your family faced a different crisis?		
Ignored family	16	11.6%
Hope for best	70	50.7%
Financial crisis	52	37.7%
Chemotherapy-induced peripheral neuropathy cause?		
Anxiety	31	22.5%
Depression	61	44.2%
Severe depression	46	33.3%

3.3. DAS Scale

The DAS scale was used to delineate the responses to questions asked to breast cancer patients in order to analyze their depression, anxiety, and stress levels. The results showed that 55 (39.9%) women found it hard to wind down the dryness of mouth, 68 (49.3%) knew about it, 51 (37.0%) did not feel any positive feelings, 43 (31.2%) experienced breathing difficulty, 52 (37.7%) were found striving to work up the initiative to do things, 45 (32.6%) over-reacted to situations, 53 (38.4%) suffered trembling, 65 (47.1%) felt that they were using lots of nervous energy, 42 (30.4%) panicked in different situations and made a fool of themselves, 60 (43.5%) felt that they had nothing to look forward to, 48 (34.8%) found themselves agitated, 51 (37.0%) did not feel relax, 50 (36.2%) felt down-hearted and blue, 45 (32.6%) were intolerant of things, 45 (32.6%) were close to panic, 54 (39.1%) were unable to get enthusiastic about things, 51 (37.0%) felt unworthy as a person, 58 (42.0%) felt touchy, 51 (37.0%) were aware how

their heart acted in the absence of physical exertion, 50 (36.2%) were fearful for no reasons, and 49 (35.5%) felt their life was meaningless (Table 3).

Table 3. DAS Scale Results of Women with Breast Cancer

Variables	Frequency (n)	Percentage (%)
I found it hard to wind down __?		
(0) Did not apply to me at all	2	1.4%
(1) Applied to me to some degree, or some of the time	28	20.3%
(2) Applied to me to a considerable degree or a good part of time	53	38.4%
(3) Applied to me very much or most of the time	55	39.9%
I was aware of dryness of my mouth__?		
(0) Did not apply to me at all	9	6.5%
(1) Applied to me to some degree, or some of the time	20	14.5%
(2) Applied to me to a considerable degree or a good part of time	41	29.7%
(3) Applied to me very much or most of the time	68	49.3%
I couldn't seem to experience any positive feeling at all__?		
(0) Did not apply to me at all	5	3.6%
(1) Applied to me to some degree, or some of the time	51	37.0%
(2) Applied to me to a considerable degree or a good part of time	40	29.0%
(3) Applied to me very much or most of the time.	42	30.4%
I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)__?		
(0) Did not apply to me at all	27	19.6%
(1) Applied to me to some degree, or some of the time	43	31.2%
(2) Applied to me to a considerable degree or a good part of time	40	29.0%

Variables	Frequency (n)	Percentage (%)
(3) Applied to me very much or most of the time.	28	20.3%
I found it difficult to work up the initiative to do things ___?		
(0) Did not apply to me at all	9	6.5%
(1) Applied to me to some degree, or some of the time	38	27.5%
(2) Applied to me to a considerable degree or a good part of time	39	28.3%
(3) Applied to me very much or most of the time.	52	37.7%
I tended to over-react to situations ___?		
(0) Did not apply to me at all	9	6.5%
(1) Applied to me to some degree, or some of the time	42	30.4%
(2) Applied to me to a considerable degree or a good part of time	45	32.6%
(3) Applied to me very much or most of the time.	42	30.4%
I experienced trembling (e.g., in the hands)?		
(0) Did not apply to me at all	26	18.8%
(1) Applied to me to some degree, or some of the time	53	38.4%
(2) Applied to me to a considerable degree or a good part of time	44	31.9%
(3) Applied to me very much or most of the time	15	10.9%
I felt that I was using a lot of nervous energy _____?		
(0) Did not apply to me at all	4	2.9%
(1) Applied to me to some degree, or some of the time	25	18.1%
(2) Applied to me to a considerable degree or a good part of time	44	31.9%
(3) Applied to me very much or most of the time	65	47.1%
I was worried about situations in which I might panic and make a fool of		

Variables	Frequency (n)	Percentage (%)
myself _____?		
(0) Did not apply to me at all	42	30.4%
(1) Applied to me to some degree, or some of the time	38	27.5%
(2) Applied to me to a considerable degree or a good part of time	35	25.4%
(3) Applied to me very much or most of the time.	23	16.7%
I felt that I had nothing to look forward to ___?		
(0) Did not apply to me at all	7	5.1%
(1) Applied to me to some degree, or some of the time	40	29.0%
(2) Applied to me to a considerable degree or a good part of time	60	43.5%
(3) Applied to me very much or most of the time.	31	22.5%
I found myself getting agitated _____?		
(0) Did not apply to me at all	3	2.2%
(1) Applied to me to some degree, or some of the time	48	34.8%
(2) Applied to me to a considerable degree or a good part of time	45	32.6%
(3) Applied to me very much or most of the time.	42	30.4%
I found it difficult to relax_____?		
(0) Did not apply to me at all	17	12.3%
(1) Applied to me to some degree, or some of the time	29	21.0%
(2) Applied to me to a considerable degree or a good part of time	41	29.7%
(3) Applied to me very much or most of the time.	51	37.0%
I felt down-hearted and blue ___?		

Variables	Frequency (n)	Percentage (%)
(0) Did not apply to me at all	37	26.8%
(1) Applied to me to some degree, or some of the time	50	36.2%
(2) Applied to me to a considerable degree or a good part of time	39	28.3%
(3) Applied to me very much or most of the time.	12	8.7%
I was intolerant of anything that kept me from getting on with what I was doing _?		
(0) Did not apply to me at all	8	5.8%
(1) Applied to me to some degree, or some of the time	44	31.9%
(2) Applied to me to a considerable degree or a good part of time	45	32.6%
(3) Applied to me very much or most of the time.	41	29.7%
I felt I was close to panic ____?		
(0) Did not apply to me at all	11	8.0%
(1) Applied to me to some degree, or some of the time	45	32.6%
(2) Applied to me to a considerable degree or a good part of time	40	29.0%
(3) Applied to me very much or most of the time.	42	30.4%
I felt I wasn't worth much as a person_____?		
(0) Did not apply to me at all	14	10.1%
(1) Applied to me to some degree, or some of the time	51	37.0%
(2) Applied to me to a considerable degree or a good part of time	45	32.6%
(3) Applied to me very much or most of the time.	28	20.3%
I felt that I was rather touchy_?		
(0) Did not apply to me at all	9	6.5%

Variables	Frequency (n)	Percentage (%)
(1) Applied to me to some degree, or some of the time	51	37.0%
(2) Applied to me to a considerable degree or a good part of time	58	42.0%
(3) Applied to me very much or most of the time.	20	14.5%
I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)?		
(0) Did not apply to me at all	23	16.7%
(1) Applied to me to some degree, or some of the time	34	24.6%
(2) Applied to me to a considerable degree or a good part of time	51	37.0%
(3) Applied to me very much or most of the time.	30	21.7%
I felt scared without any good reason_____?		
(0) Did not apply to me at all	9	6.5%
(1) Applied to me to some degree, or some of the time	35	25.4%
(2) Applied to me to a considerable degree or a good part of time	50	36.2%
(3) Applied to me very much or most of the time.	44	31.9%
I felt that life was meaningless_____?		
(0) Did not apply to me at all	13	9.4%
(1) Applied to me to some degree, or some of the time	49	35.5%
(2) Applied to me to a considerable degree or a good part of time	42	30.4%
(3) Applied to me very much or most of the time	34	24.6%

3.4. Prevalence of Depression

Table 4 shows the prevalence rate of depression among breast cancer patients. Out of 138 women, 52 (37.7%) had extremely severe depression,

33 (23.9%) had severe depression, 35 (25.4%) had moderate depression, 7% were in a mild state of depression, and 6% were in a normal condition, as shown in Figure 1.

Table 4. Prevalence of Depression among Breast Cancer Patients

Level of Depression	Frequency (n)	Percentage (%)
Normal	8	5.8%
Mild	10	7.2%
Moderate	35	25.4%
Severe	33	23.9%
Extremely Severe	52	37.7%

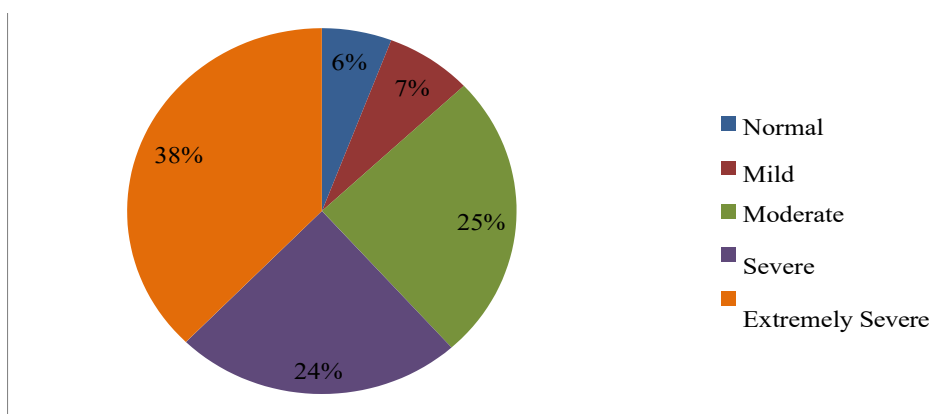


Figure 1. Prevalence of Depression in Percentage Distribution among Breast Cancer Patients

3.5. Prevalence of Anxiety

Table 5 shows the anxiety level in the patients of breast cancer. It shows that the anxiety level of 93 (67.4%) patients was extremely severe, the anxiety level of 18 (13.0%) patients was severe, while the anxiety level of 21 (15.2%) patients was moderate. Others either faced a mild state of anxiety or normal condition, as shown in Figure 2.

Table 5. Prevalence of Anxiety among Breast Cancer Patients

Level of Anxiety	Frequency (n)	Percentage (%)
Normal	3	2.2%
Mild	3	2.2%

Level of Anxiety	Frequency (n)	Percentage (%)
Moderate	21	15.2%
Severe	18	13.0%
Extremely Severe	93	67.4%

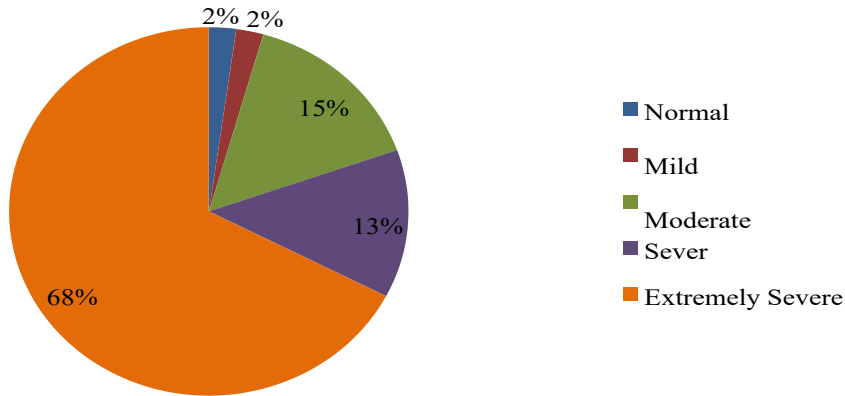


Figure 2. Prevalence of Anxiety in Percentage Distribution among Breast Cancer Patients

3.6. Prevalence of Stress

Table 6 depicts the stress rate in breast cancer patients. It shows that 40 (29.0%) women were extremely stressed, 47 (34.1%) were severely stressed, 16 (11.6%) were under moderate stress, 17 (12.3%) were mildly stressed, and 18 (13.0%) were normal, as shown in Figure 3.

Table 6. Prevalence of Stress among Breast Cancer Patients

Level of Stress	Frequency (n)	Percentage (%)
Normal	18	13.0%
Mild	17	12.3%
Moderate	16	11.6%
Severe	47	34.1%
Extremely Severe	40	29.0%

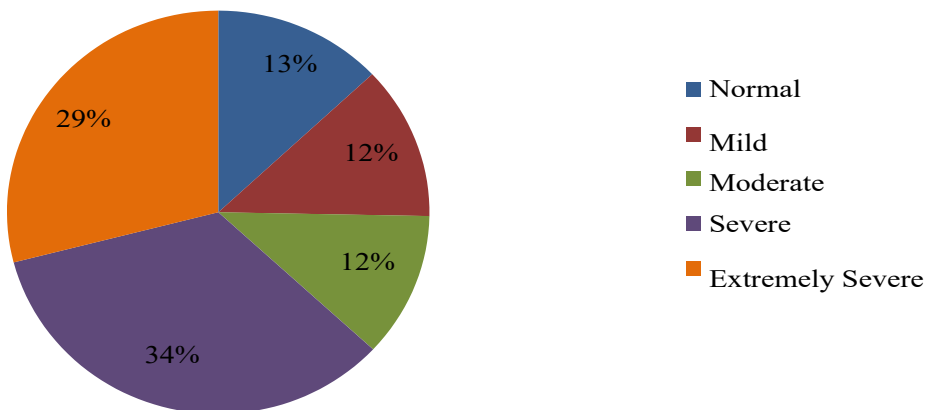


Figure 3. Prevalence of Stress in Percentage Distribution among Breast Cancer Patients

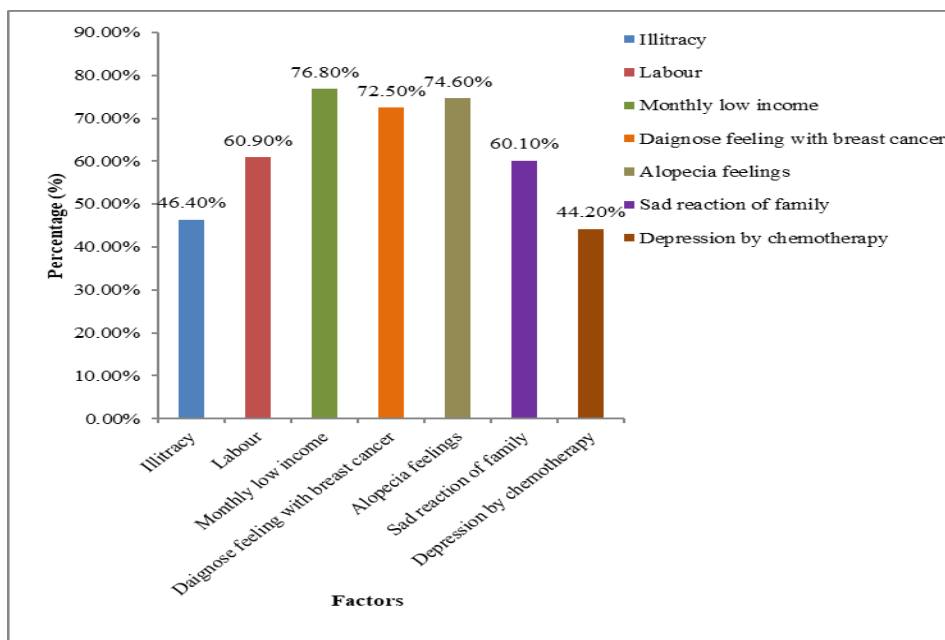


Figure 4. Factors Affecting the Prevalence of Depression, Anxiety, and Stress among Breast Cancer Patients

3.7. Factors Affecting the DAS Scale

Figure 4 represents the factors that affect the DAS scale. It shows that 64 (46.4%) women were illiterate, the husbands of 84 (60.9%) women were

labor, the monthly income of the husbands of 106 (76.8%) women was between 21-30 thousands, 100 (72.5%) women felt disappointed after diagnosis, 103 (74.6%) were disappointed due to the side effects of chemotherapy, the families of 83 (60.1%) women were sad after knowing about the disease, and 61 (44.2%) women were disheartened with chemotherapy induced peripheral neuropathy.

4. DISCUSSION

Breast cancer is one of the most common and life threatening disease among the women of developing countries. There are many factors which influence the risk of breast cancer, namely hormonal imbalance, genetic relations, environmental factors, and modern lifestyle. Psychological distress is another important factor present in all the patients of breast cancer. Although there are treatments and therapies available to cure cancer; still, when a person is diagnosed with cancer, they become anxious about their life. This anxiety makes their disease more critical in terms of management and control. The cancer is itself a complex disease with a difficult treatment, fear of resurgence, financial problems, and side effects of radiotherapy and chemotherapy.

Many studies have linked emotional distress and behavior with the prevalence of breast cancer among women. The current study assessed the rate of depression and anxiety among breast cancer patients and the factors that influence the prevalence of these psychological parameters. According to the results, 56 out of a total of 138 (40.6%) women with breast cancer were 41-50 years of age, 133 (96.4%) were married, 64 (46.4%) education of women were illiterate, 84 (60.9%) women's husband were labor and 106 (76.8%) monthly income of women husband were between 21-30 thousand. The 52 women (37.7%) were in extremely severe depression with breast cancer, 33 women (23.9%) were in severe depression with breast cancer and 35 women (25.4%) were in moderate depression with breast cancer.

Similarly, these patients were also suffered from anxiety during their treatment journey. The 93 out of 138 (67.4%) women were in extremely severe anxiety during breast cancer, 18 (13.0%) women were in severe anxiety and 21 (15.2%) women were in moderate anxiety and prevalence of stress The symptoms of stress were also expressed in some of the patients as 40 (29.0%) women were in extremely severe stress, 47 (34.1%) women were in severe stress. 100 (72.5%) women disappointed on diagnosis of

their disease, 103 (74.6%) women were disappointed due to side effects of chemotherapy (Alopecia), 83 (60.1%) women's family were sad. The family of 70 (50.7%) patients was felt hope for best when female admitted in hospital and 61(44.2%) women were depressed with chemotherapy induced peripheral neuropathy.

Naser et al., 2021 performed a cross-sectional study on cancer patients in Jordan to evaluate the prevalence of stress and depression among them. They collected the data of 1011 patients including both male and female patients. The study was conducted on various types of cancer including lung cancer, bladder cancer, and others. The prevalence of depression and stress was high among the patients who were hospitalized during their treatment, as compared to the outpatients [16]. Another study, also reported in Jordan on the patients of breast cancer, investigated the symptoms of depression and anxiety in those patients. The symptoms of depression were prevalent in approximately 30% of them [17]. Further, a study was conducted in Egypt to estimate the rate of depression, anxiety, and stress among the patients of breast cancer. The study reported that 68% of patients experienced depression, 73% felt anxiety, and 78% were stressed on the diagnosis of their disease [18]. These studies support the results of the current study.

A similar study was conducted in Germany. The study reported similar side effects during chemotherapy, nature, degree, and perceived disability among the subjects. The most prevalent side effect for all women was hair loss, although they dealt with it in different ways. Some of them proudly flaunted their bald heads in public, while others even avoid living in their houses without their wigs on. Fear, grief, and rumination were the most often cited psychological problems incurred as a result of the psychological load of a life-threatening sickness. Sleep disturbance was also indicated by the majority of the women as a source of stress. The majority of women expressed exhaustion while mentioning weakness, attention problems, and low endurance [19].

4.1. Conclusion

Depression, anxiety, and stress are the most common factors commonly found in the patients of breast cancer. There were approximately 37.7% patients suffering from severe depression, 67.4% suffered from extremely severe anxiety, and 34.1% were severely stressed. Age is also an

important factor as old age people are prone to depression, anxiety, and stress and also worry about excessive treatment cost. Illiteracy, low income, and disappointment are also the causing factors of psychological disorders. Healthcare professionals should conduct psychotherapy of patients for psychological disorders. On the other hand, special attention should be given to the patients with associated factors related to depression, anxiety, and stress.

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