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The Prevalence of Psychiatric Disorders in Breast Cancer Patients; A Cross-Sectional Study of Breast Cancer Patients Experience in Pakistan

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Abstract

Background: This present study examined the prevalence and association of psychiatric disorders including hospital anxiety, stress, and depression, positive and negative affect in breast cancer patients. Furthermore, this study also investigated moderating role of emotional regulation on the relationship between hospital anxiety, and symptoms of   stress, anxiety and depression.

Methods: Purposive sampling technique was used bases on cross-sectional study design. One hundred fifty-five   diagnose patients with breast cancer were recruited from different hospitals as the Noori Hospital, Islamabad, Pakistan Institute of Medical Sciences, Islamabad, Kulsoom International Hospital and Combined Military Hospital, Rawalpindi, Pakistan from August, 2019 to January, 2020 . The participant's age ranges from 20 to 50 years old (M=35.00, SD=2.01). Four standardized instruments were performed to examine the prevalence of hospital anxiety, stress, depression, anxiety, emotional regulation, positive and negative mood swings in patients with breast.

Results: Correlational and moderation analysis was performed to analyze data of study. This study's results demonstrated that hospital anxiety was positively associated with psychological distress, anxiety and depression in breast cancer patients. Moreover, results of current study revealed that emotional regulation was negatively related to higher level of negative mood and hospital depression in cancer patients. Moreover, Finding also demonstrated that emotional regulation was playing role of moderator between overall hospital anxiety and   emotional regulation in breast cancer patients. Moderation analysis found that hospital anxiety was associated with lower level of   stress because it favors of higher prevalence of emotional regulation in breast cancer patients.

Conclusions: The results of this study will be very helpful in hospitals for evaluation psychiatric features such as depression, anxiety and stress in breast cancer patients. But still there is a need to discover other psychological factors relating this study.

Keywords: Emotion regulation, hospital anxiety, depression, positive and negative affect.

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Background

Breast cancer is one of the most widespread disease and the important reason of death in women globally. According to the World Health Organization (2018), there were reported more than 626,679 breast cancer patients associated mortality in all over the world. Prevalence of breast cancer was 11.6% in all kinds of cancer, as well as mortalities rate of breast cancer was found 6.5% in all over the world(Bray et al., 2020; Siegel et al., 2019). Breast cancer is a cluster of diseases in which cells in breast tissue change and divide abandoned, typically resulting in a lump or mass (Peled et al., 2008). Most breast cancers begin in the lobules (milk glands) or in the ducts that connect the lobules to the nipple. Breast cancer is the most frequent malignant disease among women. According to American reports every third cancer is diagnosed as BC. In 2002 the incidence rate and death rate for invasive Breast cancer , were 124.9 and 25.5 per 100,000 women respectively (Schroevers et al., 2011). In Europe breast cancer has become the commonest cancer diagnosed overall, with 429,900 new cases in 2006 (13.5% of all cancer cases), before lung cancer (Schroevers et al., 2011). The survival percentage of patients with breast cancer in developed states has enhanced day by day because of the modern initial assessment and treatment (Plevritis et al., 2018). But, the death rate of patient with breast cancer in few developing and several under-developing countries stills high because of inadequate early screening or traditional treatments, leaving an whole high mortality rate globally (DeSantis et al., 2015).

In many under-developing countries, Breast cancer is one of the more prevalent cancer in Pakistani populace than the developing Western populace (Mahmood et al., 2006). A study was conducted in Shaukat Khanum Memorial Cancer hospital reported which 1 in every 9 Pakistani women experience breast cancer that is one of the uppermost prevalence percentage in Asia counties (Sohail et al., 2007). Newly, prevalence of breast cancer is 21.5 percent in all as well as 45.9 percent in women patients (Badar et al., 2011). Several biological and environmental factors can influence breast cancer mortality and progression. Prior researches have revealed that physiological factors as the conditions of lymph nodes, histological subtypes, and tumor size are considered crucial deleterious factors shaping its clinical consequences (Carter et al., 1989; medicine & 2020, 2020; Solak et al., 2015). Furthermore, clinical study's findings have shown that psycho-social factors and demographic characteristics including gender, age, smoking, obesity, estrogen application, mental health issues as depression, anxiety and mood swings are also significantly associated with breast cancer onset or progression (Adami et al., 1985; Arce-Salinas et al., 2014; Fuentes Alburo et al., 2005; Lafourcade et al., 2018; Weiss et al., 1995). Notably, with the shift from the old medical approach to a modern bio psychosocial medical approach, much more focus was given to the influence of psychological variables in the prognosis, etiology, and treatment of patients with breast cancer.

Furthermore, the prevalence of mental health problems particularly depression is higher in the initial year later breast cancer diagnosis. Previous studies conducted by Maass et al. (2015) and Vahdaninia et al. (2010) found that depression was higher in first year after diagnosis (Maass et al., 2015). On the other hand, according to Vahdaninia et al., (2010), he reported 32.8% prevalence of depression in a very large sample of cancer patients. It was also found 40% prevalence of anxiety and depression in cancer patients who face disease recurrence (Vahdaninia et al., 2010). Moreover, Reich et al. (2008) found 42% prevalence of different mental health issues and out of which 35.7% breast cancer patients experienced anxiety or depression. Major depression in 7%, Mild depression was reported in 25.6%, as well as 6.2% prevalence of anxiety disorder (Reich et al., 2008; Tsaras et al., 2018).

Breast cancer treatments as chemotherapy and radiation therapy can bring changes in normal routine life of person, a reduce in quality of life, cognitive ability, and arise conflict in social relationships (Kocalevent et al., 2017). Patient with long-term breast cancer also face mental health issues as anxiety and depression (Plevritis et al., 2018). The mental health outcomes of patient with breast cancer are frequently left or neglected totally untreated, mostly because of the attention on the remedies of the real illness. Actually, researches illustrated that psychiatric problems were appeared to and treated in only 40 percent of patients with breast cancer (Kocalevent et al., 2017). Previous studies explained anxiety was enhanced naturally at the onset of cancer diagnosis patients but declines over the period of the time with cope up with this disease. However, it may enhance again after in life with exposure of the severity of signs (Plevritis et al., 2018).According to American Cancer Society (2019), breast cancer patients who had poor coherence's sense to fulfill demands of life were more prone to be found higher psychological distress (American Cancer Society, 2019). However, patients with breast cancer who were able to understand and handle present circumstances found and use more positive coping strategies like relaxation and direct action as well as this was linked to quality of life and better health outcomes (Kocalevent et al., 2017).

Majority of previous studies have focused on examine psychiatrist problems including depression, anxiety, and psychological distress in commonly; less focus was paid to the levels of positive or negative feelings or attitudes. This present study hypotheses constructed base on psychological theories. Both negative and positive affect were well known as separate axes of mental health, actually that things has dragged to the growth of new scales development as Positive and Negative Affect Schedule (Watson et al., 1988). In recent studies conducted within domain of Neuro-psychology which is appeared concept of negative and positive affect as fruitful (Carver et al., 1999).

A modern experimental investigation demonstrated that positive changes in personality have not been significantly associated with negative affect. However, Findings of these studies have been significantly associated with improved positive affect (Schroevers et al., 2011).

This study's results recommended that it is crucial to differentiate positive and negative affect, as both could be inversely associated with positive changes. This study investigated moderating role of emotional regulation on the relationship between hospital anxiety, and symptoms of stress, anxiety and depression in patients with breast cancer. Moreover, examine the association among hospital anxiety, stress, and depression, positive and negative affect in breast

cancer patients.

Method

Design

Purposive sampling technique was used bases on cross-sectional study design.

Objectives

1. To investigate the prevalence and association of psychiatric disorders including hospital anxiety, stress, depression, positive and negative affect in breast cancer patients..
2. To examines moderating role of emotional regulation on the relationship between hospital anxiety, and symptoms of stress, anxiety and depression in patients with breast cancer.

Hypotheses

H1: Emotional regulation is negatively associated with hospital anxiety, positive and negative mood swings, and symptoms of stress, anxiety and depression in patients with breast cancer.

H2: Hospital anxiety is positively associated with symptoms of stress, anxiety and depression in patients with breast cancer.

H3: Emotional regulation moderates on the relationship between hospital anxiety, and symptoms of stress, anxiety and depression in patients with breast cancer.

Participants

A cross-sectional, descriptive research was carried out between 1st august and 31st January 2019 in an oncology Noori Hospital, Islamabad, Pakistan Institute of Medical Sciences, Islamabad, Kulsoom International Hospital and Combined Military Hospital, Rawalpindi of Pakistan. The sample comprised of 150 randomly recruited diagnose breast cancer patients who visited oncology outpatient department for routine checkup and fulfill the inclusion criteria of present study. All volunteer patients were included only women who diagnosed breast cancer as well as they were going through different oncological therapies as chemotherapy and radiation therapy. Moreover, the inclusion criteria of present study for current sample were the following: (1) histologically reported diagnosis of breast cancer (2) only woman included in present study with 18 or above years of age, (3) there is no history of earlier psychiatric disorders or dementia, (4) appropriate information of the Urdu language, and (6) written and verbal inform consent to contribute in the investigation.

Measures

Hospital Anxiety, Depression Scale (HADS).

Hospital Anxiety, Depression Scale (HADS-A; Zigmond & Snaith, 1983) is an 14-items instrument which is used to measure hospital anxiety and depression in breast cancer patients. it consists of two subscales; Depression and Anxiety. Each item is rated a four-point Likert scale from 0 to 3. High scores on shows higher prevalence of hospital anxiety in cancer patients, however, lower scores indicate lower prevalence of anxiety in cancer patients. The HADS has illustrated suitable reliability and validity (Zigmond & Snaith, 1983). The Cronbach alphas coefficient have been 0.81 for Anxiety, 0.83 for depression, respectively in the present study.

Depression, Anxiety, Stress Scale (DASS).

Depression, Anxiety, Stress Scale (DASS; Lovibond & Lovibond, 1995) is a 42-items instrument which is mostly used to assess psychological distress, stress, anxiety and depression in breast cancer patients. it consists of three subscales; Stress, Depression and Anxiety. Each item is rated a five-point Likert scale from 1 to 5. High scores on shows higher prevalence of stress, anxiety, and depression in cancer patients, however, lower scores indicate lower prevalence of stress, anxiety, and depression in cancer patients. The DASS has illustrated suitable reliability and validity (Lovibond & Lovibond, 1995). the Cronbach alphas coefficient have been 0.86 for Anxiety, 0.89 for depression, .85 for stress respectively in the present study .

Positive and Negative Affect Schedule

Positive and negative Affect Scale (PANAS; Clark & Tellegen, 1998; Hussein & Vostania, 2008) is an 10-items instrument which is used to measure positive and negative effects in breast cancer patients. it consists of two subscales; Positive affect and Negative affect. Each item is rated a Five -point Likert scale from 1 to 5. High scores on shows higher prevalence of positive and negative effects in cancer patients, however, lower scores indicate lower prevalence of positive and negative effects in cancer patients. The PANAS has illustrated suitable reliability and validity(Hussein et al., 2008; Tellegen et al., 1998). In the present study, the Cronbach alphas coefficient have been 0.72 for negative affect, 0.75 for positive affect, respectively.

Emotion Regulation Questionnaire (ERQ).

Emotion Regulation Questionnaire (ERQ; Gullone & Taffe, 2012; Melka et al., 2011) is an 10-items instrument which is used to measure emotion control, regulation, suppression and reappraisal in breast cancer patients. Each item is rated a seven -point Likert scale one (*strongly disagree*) to seven (*strongly agree*). High scores on shows higher prevalence of emotion control, regulation, suppression and reappraisal in cancer patients, however, lower scores indicate lower prevalence of emotion control, regulation, suppression and reappraisal in cancer patients. The ERQ has illustrated suitable reliability and validity(Gullone & Taffe, 2012; Melka et al., 2011). In the present study, the Cronbach alphas coefficient have been 0.72 for emotional regulation.

Procedure

One hundred fifty diagnosed patients with breast cancer were recruited from different hospitals, Islamabad and Rawalpindi, Pakistan. Age ranged from 18 to 50 years (M=35.00, SD=2.01). After taking an official written and verbal of consent, the research protocols were approved by Ethical review committee of Department of Psychology, Foundation University Islamabad, Pakistan and the scientific committee of the above-mentioned hospitals where the

Results

Table 1

Alpha Reliability Coefficient and Mean Standard Deviation, correlational matrix of hospital anxiety, stress, depression, anxiety, emotional regulation, positive and negative mood swings in patients with breast (N =150).

Variables	M	SD	α	1	2	3	4	5	6	7	8	9	10	11
DASS	70.60	16.04	.93	-	.97**	.95**	.94**	-.04	.16	-.20*	.18*	.17	.08	.09
Depression	23.85	5.96	.86		-	.91**	.88**	-.03	.15	-.17	.19*	.21*	.03	.11
Anxiety	23.6	5.18	.89			-	.83**	-.11	.11	-.22*	.14	.126	.07	-.01
Stress	23.18	5.48	.85				-	.01	.21*	-.19*	.19*	.15	.12	.12
PANASS	31.55	3.37	.78					-	.51**	.60**	.17	.12	.12	-.28**
Positive affect	17.50	2.89	.75						-	-.36**	.03	-.04	.06	.05
Negative affect	14.05	3.10	.72							-	.15	.13	.08	-.25**
HADS	21.37	2.67	.85								-	.80**	.64**	-.30**
HADS_D	11.09	2.05	.83									-	.06	-.34**
HADS_A	10.28	1.58	.81										-	.07
ERQ	49.12	11.96	.75											-

Note. PANAS= Positive and Negative Affect Schedule Scale**;** HADS= Overall Hospital Anxiety Scale; HADS_D; Hospital Depression Scale, HADS_A= Hospital Anxiety Scale, ERQ= Emotional Regulation Questionnaires. *p < .05, p < .01*

Table 2

The moderating role emotional regulation on the relationship between hospital anxiety and symptom of the stress in breast cancer patients (N=150)

(Constant)	B	SD	β	p	R^2	F^2
HADS	12.75	3.99	.14	.00	.063	8.223*
ERQ	-.296	.190	-.16	.12		
ERQ* HADS	-.077	.045	-.26	.00		
Constant	1.046	.365		.00		

Note. HADS= Overall Hospital Anxiety Scale; ERQ= Emotional Regulation Questionnaires; ERQ* HADS= interaction between Overall Hospital Anxiety Scale and Emotional Regulation Questionnaires.

p < .05, p < .01, ***p<.00*

investigation was carried out. Before starting to the interview, all study's patients have been provided description of the present study aim as well as they signed written informed consent form to participate in present study. This study was implemented following the standard principles of anonymity, confidentiality and written and verbal informed consent, as guidelines by the Declaration of American Psychological Association.

Results

Statistical software SPSS (version-21) were used to analyze data of current study. Correlational and moderation analysis was applied to confirm hypothesis and objectives of current study. Moderation analysis was used through regression analysis.

In Table 1, findings of study revealed that psychological distress was positively significantly associated with anxiety, stress depression, hospital anxiety in breast cancer patients but it was also negatively

significantly associated with negative mood swings. However, hospital anxiety was associated with psychological distress, anxiety and depression in breast cancer patients. Hospital depression was negatively associated with emotional regulation. Results of current study revealed that emotional regulation was negatively related to higher level of negative mood and hospital depression in cancer patients.

In Table 2, results demonstrated that hospital anxiety was positively significant predicting symptoms of stress in breast cancer patients. However, it also revealed that emotional regulation was negatively non-significant predicting symptoms of stress in current sample. Moreover, interaction between hospital anxiety and emotional regulation was negatively significant predicting symptoms of stress in breast cancer patients. Finding also demonstrated that emotional regulation was playing role of moderator between overall hospital anxiety and emotional regulation in breast cancer

patients. Moderation analysis found that hospital anxiety was associated with lower level of stress because it favors of higher prevalence of emotional regulation in breast cancer patients.

Discussion

The present study examined the association among hospital anxiety, stress, and depression, positive and negative affect in breast cancer patients. Furthermore, this study also investigated moderating role of emotional regulation on the relationship between hospital anxiety, and symptoms of stress, anxiety and depression in patients with breast cancer. The present study's results demonstrated that hospital anxiety was positively associated with psychological distress, anxiety and depression in breast cancer patients. Moreover, results of current study revealed that emotional regulation was negatively related to higher level of negative mood and hospital depression in cancer patients. These results are consistent and supported with our study's first objective or first and second hypotheses. Moreover, Finding also demonstrated that emotional regulation was playing role of moderator between overall hospital anxiety and emotional regulation in breast cancer patients. Moderation analysis found that hospital anxiety was associated with lower level of stress because it favors of higher prevalence of emotional regulation in breast cancer patients. The current study's findings clarified and supported our study second objective, or third and fourth hypotheses. These results are consistent with findings of prior similar investigation (Adami et al., 1985; Arce-Salinas et al., 2014; Fuentes Alburo et al., 2005; Lafourcade et al., 2018; Weiss et al., 1995). Earlier study's findings have shown that psycho-social factors and demographic characteristics including gender, age, smoking, obesity, estrogen application, mental health issues as depression, anxiety and mood swings are also significantly associated with breast cancer onset or progression (Adami et al., 1985; Arce-Salinas et al., 2014; Fuentes Alburo et al., 2005; Lafourcade et al., 2018; Weiss et al., 1995; Watson et al., 1988).

Limitation and implication

A few recommendations may incorporated in future researches that the researcher would like to make future studies to improve, enhance, and continue the work on understanding the topic of mental health issues in medical sample: To go for a bigger sample size in terms of the numbers of participants as well as gathering the sample from different hospitals of countries for better generalizability. Translating and adapting the scales used in the current study to make the instruments more indigenous for further enhancing the reliability and validity of measure. Adding demographics for hospital anxiety, emotional regulation, positive and negative mood swings, symptoms of stress, anxiety and depression in patients with breast cancer.

Conclusion

This study's findings concluded that hospital anxiety could be stimulated and associated with higher level of mental health problems such as positive and negative mood swings, symptoms of stress, anxiety and depression in patients with breast cancer. Moreover, this study also recommended that hospital anxiety could be enhanced level of mental health issues because it favors of lower level of emotional regulation in breast cancer patients. However, hospital anxiety could be decreased level of mental health problems like symptoms of stress because it favors of higher level of emotional regulation in breast cancer patients. The current study has practical and theoretical implications.

Ethical Consideration

The study was approved by the Foundation University Islamabad. Consent Form was taken before taking data and participants were asked to take voluntary participation

Availability of data and materials

The data sets used and analyzed during the current study are available from the corresponding author on reasonable request.

Authors' contributions/Author details

Miss Amna performed the main study under the supervision of Muhammad Aqeel. Amna Muhammad Aqeel, Bushra Malik and Sammeen Salim wrote the article under the guidelines of Nature-Nurture Journal of Psychology.

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Ethics declarations

Ethics approval and consent to participate

This study was approved by the Institutional Review Board (Foundation University Islamabad). A written informed consent was obtained from all participants.

Consent for publication

Not applicable.

Competing interests

The authors declare to have no competing interests.

Additional Information

Not applicable.

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