

Personality, Defense Mechanisms and Psychological Distress in Women with Breast Cancer

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DOI: 10.47750/pnr.2023.14.02.296

Abstract

Background Many studies have shown that many personality traits are associated with breast cancer (BC), worsening both the quality of life and psychological distress of patients. These increased levels of distress increase the risk of depression and anxiety with subsequent adverse effect on compliance to cancer treatment. Despite the high comorbidity of psychopathological disorders in this disease and their association with defense styles, few studies have examined the defense mechanisms used by BC patients. The main aim of our study was to investigate personality disorders and defense mechanisms in BC patients. **Objective** The aim of this study was to detect psychiatric comorbidity and impact of defense style, personality variables in patients with breast cancer and study their relations with tumor grading and histopathological characteristics. **Patients and Methods** In this cross-sectional study. About 150 patients with breast cancer were evaluated for having breast cancer according to laboratory, radiological and pathological investigations. Participants were females aged 18 years or older. Patients with history of another cancer, comorbid serious medical condition, in their investigation phase of cancer diagnosis or those who refused to participate in the study were excluded. The tools applied to participants were the Symptom Checklist 90 Revised, Defense style Questionnaire-40 and Structured Clinical Interview for DSM- IV Axis II (SCID-II) . **Results** One hundred thirteen patients (75.3%) had psychiatric comorbidity; somatization was the most common psychiatric comorbidity (58.7%) followed by depression (40.7%). Patients with and without comorbid psychiatric illness used mature defense mechanisms than neurotic and immature defenses. Personality variables which is related to pattern of use of defense mechanisms, in order of the mean mature defenses came first followed by neurotic followed by immature defense mechanisms and we found that (22%) of patients had criteria of obsessive – compulsive personality, (18.7%) had borderline criteria, (16.7%) had dependent criteria **Conclusions** Psychiatric comorbidity are common in patients with breast cancer. Personality characteristics and defense style used by breast cancer patients could shape the presenting psychiatric disorder

Keywords: Breast cancer, Defense Mechanisms, Psychiatric comorbidity, Personality.

INTRODUCTION

The incidence of breast cancer is increasing, and it is the second largest cause of cancer mortality among women. Breast cancer, like other chronic diseases, presents a unique set of challenges and dangers⁽¹⁾.

For decades, studies have suggested that women are more likely to develop breast cancer if they experienced emotional disconnection from their parents or other childhood disturbances; if they tend to repress emotions, particularly anger; if they lack nurturing social relationships in adulthood; or if they are the altruistic, compulsively caring types⁽²⁾.

However, for some people, learning they have breast cancer may cause severe emotional and mental anguish that might compromise their ability to live a normal life. Researchers are becoming more interested in determining what characteristics lead to resilience, good coping with cancer, and other beneficial psychological consequences^(3,4,5).

Individual differences in temperament, character, and other psychological traits are the result of a complex interaction between genetics and upbringing⁽⁶⁾. Personality, according to trait-based theories, consists of the set of characteristics that may be used to foretell an individual's actions (Cattell, 1965)⁽⁷⁾. However, personality is understood in terms of learned behaviours in more behaviorally oriented method⁽⁶⁾.

As invented by Sigmund Freud in his papers^(8,9), the defense mechanisms were unconscious mental process that directed to modulate the expression of drives and impulses

The severity and duration of treatment-related side effects, as well as how well patients manage these side effects, may be influenced by a patient's personality. Neurotic, disagreeable, and introverted breast cancer patients report feeling tired more often ⁽¹⁰⁾.

PATIENTS AND METHODS

This cross sectional study was conducted in Minia Health Insurance Hospital and Minia Oncology Center. Aim of the study was discussed and explained to oncology department team who helped us in recruiting patients diagnosed with breast cancer. We recruited 150 patients diagnosed with breast cancer who met our inclusion and exclusion.

Inclusion Criteria Female patients diagnosed with breast cancer, and age above 18 years old.

Exclusion criteria Refusal of the patient to participate in the study procedures, patient who had a previous diagnosis of another cancer in the past, patient who were undergoing investigations for cancer, and patient who were suffering from any other serious illness.

Tools of the study

Symptom Checklist 90 Revised (SCL-90-R)⁽¹¹⁾

The Symptom Checklist-90-R (SCL-90-R) is a self-report relatively brief psychometric assessment. It is designed to evaluate symptoms of psychopathology and psychological problems. It is also used in following the outcome and progress of psychological as well as psychiatric interventions for research purposes ⁽¹⁰⁾.

It is normed on individuals 13 years and older and consists of 90 items giving nine scores for primary symptom dimensions and three scores representing global distress indices. The primary symptom dimensions are somatization, obsessive-compulsive, depression, anxiety, interpersonal sensitivity, hostility, phobic anxiety, psychoticism, paranoid ideation, and a category of "additional items" ⁽¹²⁾.

There are three SCL-90 global indices: 1) Global Severity Index (GSI): average score of the questionnaire's 90 items, 2) Positive Symptom Distress Index (PSDI): average score of the above zero scored items, and 3) Positive Symptoms Total (PST): number of the above zero scored items. The GSI is supposed to be the disorder's current level best single indicator, while PSDI is an intensity measure assessing patient's response style (attenuating or augmenting symptoms) ⁽¹¹⁾.

Defense style questionnaire

The Defense Style Questionnaire (DSQ) ⁽¹³⁾ is a self-report instrument that evaluates clusters of defenses termed defensive styles along a (Vaillant's, 1994) ⁽¹⁴⁾ spectrum from defenses that are underdeveloped or maladaptive to those that are fully developed and adaptable ⁽¹⁵⁾. The Defense Styles Questionnaire (DSQ) was developed as a means of measuring and operationalizing the conscious offshoots of ego defenses.

Because of the difficulties involved in accurately assessing defences (Andrews & Bond, 1993)⁽¹³⁾, the DSQ instead aims to assess defensive styles.

Here are some examples of these fashions: the maladaptive style, which demonstrates the respondents' inability to cope with stress by using actions or behaviours for their own advantage; the image-distorting style, which reflects a pattern of splitting the self-image and the image of others, avoiding reality and stressful situations; the self-sacrificial style, which includes a denial of one's own needs and a focus on being kind to others; and the adaptive style, which is adopted by the people who are able to elicit positive (San Martini et al., 2004) ⁽¹⁶⁾.

The format of the DSQ-40, the instrument we utilised, is as follows: Sublimation, humour, anticipation, and suppression are the four defences found in the mature factor; undoing, pseudo-altruism, idealisation, and reaction formation are the four defences found in the neurotic factor; and twelve defences are found in the immature factor (projection, passive-aggression, acting-out, isolation, devaluation, autistic fantasy, denial, displacement, dissociation, splitting, rationalisation and somatization). The biggest complaint about the tool is that it is susceptible to the subject's reaction distortions (ego defences) (Hyphantis, 2010) ⁽¹⁵⁾. Arabic version of Defense style Questionnaire-40 by (Hanaa Soliman, 1997)⁽¹⁷⁾

Structured Clinical Interview for DSM- IV Axis II (SCID-II)

DSM-Structured IV's Clinical Interview (First et al, 1997)⁽¹⁸⁾. DSM-IV Axis I Disorders are evaluated via the Structured Clinical Interview for Axis I Disorders (SCID-I) (major mental disorders). The SCID-II is a test used to diagnose diseases of the Axis II (personality disorders).

Items of SCID II: Antisocial (ATS), Avoidant (AVD), Borderline (BDL), Dependent (DEP), Histrionic (HST), Narcissistic (NAR), Obsessive-Compulsive (OBC), Paranoid (PAR), Schizoid (SCZ), Schizotypal (SZT)

Ethical Consideration

We explained the aim as well as the procedures of the study to all participants after reassuring them about confidentiality. All participants provided a written informed consent before enrollment in the study. The approval to conduct this study has been obtained from Minia University Academic and Ethical Committee. Data related to histopathological diagnosis such as type and staging was collected from hospital records after taking authority

permission. This study has been carried out in accordance with The Code of Ethics of the World Medical Association for studies involving humans (Declaration of Helsinki). The participants had the right to withdraw from the study at any stage without any negative consequences.

Statistical Analysis

The collected data were coded, tabulated, and statistically analyzed using SPSS program (Statistical Package for the Social Sciences) 20th version. Descriptive statistics performed for numerical variables were mean, standard deviation (SD), median, interquartile range (IQR), minimum and maximum, while numbers and percentages were done for categorical variables. Chi square test was used for comparing groups regarding categorical variables while independent sample t test was used for comparing groups regarding quantitative variables. P value < 0.05 was considered statistically significant.

RESULTS

In this cross sectional study we recruited 150 patients diagnosed with breast cancer. The mean age of the sample was 51.67± 8.6 years, the majority (70%) were married and 60% were employed. Regarding contraception, 35.3% of patients had a history of oral hormonal contraception, while injectable contraception and IUD rates were 15.3% and 34.7% respectively. Forty patients (26.7%) reported positive family history of breast cancer (Table 1a,b).

Table (1a) Sociodemographic data of studied sample.

Parameters		Study group (n= 150)	
		N	%
Age (years)	Mean± SD	51.67± 8.6	
	Median (IQR)	51 (45- 57.25)	
	Range	35- 72	
Marital status	Single	4	2.7 %
	Married	105	70.0 %
	Divorced	3	2.0 %
	Widow	38	25.3 %
Residence	Rural	64	42.7 %
	Urban	86	57.3 %
Employment	Employed	90	60.0 %
	Un Employed	60	40.0 %
Education Level	Illiterate	43	28.7 %
	Primary School	7	4.7 %
	Secondary School	3	2.0 %
	Technical School	41	27.3 %
	Highly graduated	56	37.3 %
Pregnant while diagnosis Breast cancer	Yes	3	2.0 %
	No	7	98.0%

Table (1b) Sociodemographic data of studied sample.

Parameters		Study group (n= 150)	
		N	Percent
Lactating	Lactating	134	89.3 %
	Artificial Feeding	12	8.0 %
	no lactation	4	2.7 %
Smoking	No	150	100 %
Contraception	Oral Hormonal	53	35.3 %
	Injectable	23	15.3 %
	Mechanical IUD	52	34.7 %
	No contraception	22	14.7 %
Family history of breast cancer	Positive	40	26.7%
	Negative	110	73.3%

SD= standard deviation, IQR: interquartile range,

Table (2) Description of the study sample as regard type of psychiatric illness according to SCL 90 Revised check list.

SCL- 90- R	N	Percent %
Depression	61	40.7%
Somatization	88	58.7%
Obsessive Compulsive	35	23.3%
Anxiety	37	24.7%
Hostility	38	25.3%
Paranoid Ideation	11	7.3%
Phobic Anxiety	20	13.3%
Interpersonal Sensitivity	28	18.7%
Psychotic	24	16%
GSI (Global Severity Index)	27	18%
PST (Positive Symptom Total)	32	21.3%
PSDI (Positive Symptom Distress Index)	69	46%

GSI, Global Severity Index; PST, Positive Symptom Total; PSDI, Positive Symptom Distress Index; Extra(disturbance of appetite, sleep pattern guilt feeling and thinking about death).

Psychiatric comorbidity as measured by the SCL-90-R revealed that 113 patients (75.3%) had psychiatric comorbidity; somatization was the most common psychiatric comorbidity. Among those patients with psychiatric comorbidity, there were 69 patients with Positive Symptom Distress Index (PSDI) indicating intensity of the positive symptoms, 32 patients with Positive Symptom Total (PST) and 27 with Global Severity Index (GSI) indicating that those patients were in need to start medications (Table 2).

Table (3) Description of the defense style as regard mature, immature and neurotic defenses in the whole sample according to DSQ-40.

Variable	Range	Mean± SD
Mature	2 - 10.50	6.11± 1.64
Immature	2.83 - 16.50	5.68±2.37
Neurotic	3 - 12	5.99±1.48

Table (4) Description of the defense style in the whole sample according to DSQ-40.

Defense	Range	Mean± SD
Projection	1 - 7.50	4.07±1.81
Passive Aggression	1 - 7.50	3.55±2.35
Acting out	1 - 9	5.16±2.69
Isolation of the affect	1 - 9	5.74±2.73
Devaluation	1 - 9	5.18±2.17
Autistic Fantasy	1 - 9	4.51±2.12
Denial	1 - 9	5.02±2.31
Splitting	1 - 9	4.63±2.21
Somatization	1 - 9	6.90±2.81
Sublimation	1 - 9	6.68±2.35
Suppression	1 - 9	6.33±2.17
Pseudo altruism	5 - 9	7.76±1.62
Rationalization	1 - 9	6.42±2.26
Reaction Formation	1 - 9	6.32±2.18
Humor	1 - 9	5.03±3.02
Dissociation	1 - 9	5.05±2.13
Idealization	1 - 9	5.09±2.33
Anticipation	1 - 9	6.41±2.20
Undoing	1 - 9	4.09±2.42
Displacement	1 - 9	5.28±2.59

Table (5) Description of the study samples as regard most common used defense mechanism according to DSQ-40.

Defense Style	N	Percent %
Pseudo- altruism	121	80.7%
Somatization	104	69.3%
Sublimation	92	61.3%
Rationalization	90	60%
Reaction formation	87	58%
Suppression	84	56%
Isolation of the affect	83	55.3%
Humor	61	40.7%
Acting out	60	40%
Devaluation	57	38%
Denial	54	36%
Displacement	54	36%
Anticipation	50	33.3%
Idealization	46	30.7%
Dissociation	45	30%
Autistic fantasy	40	26.7%
Undoing	35	23.3%
Passive aggression	29	19.3 %
splitting	27	18%
Projection	20	13.3%

Participants of our study were assessed for defense mechanism used by DSQ- 40, in order of the mean mature defenses came first followed by neurotic followed by immature defense mechanisms as shown in (Table 3). Among them, those used pseudo- altruism (80.7%) were the commonest followed by somatization (69.3%), sublimation (61.3%), rationalization defense (60%), reaction formation (58%), suppression (56%), isolation of the affect (55.3%), humor (40.7%), acting out (40%), devaluation (38%), denial (36%), displacement (36%), anticipation (33.3%), identification (30.7%), dissociation (30%), autistic fantasy (26.7%), undoing (23.3%), passive aggression (19.3%), splitting (18%) while patients used projection (13.3%) were the least among other defenses as shown in (Table 4,5).

Comparison between mature, immature and neurotic defense mechanisms in patients with and without psychiatric illness in studied sample

Mature defenses mean was higher in breast cancer patients without psychiatric illness, and immature defenses mean higher in breast cancer patients with psychiatric illness, and this difference was statistically insignificant as shown in (Table 6).

Table (6) Comparison between patients with breast cancer with and without psychiatric illness according to (type of mature, immature and neurotic defenses measured by DSQ)

	Without psychiatric illness (n=37)	With psychiatric illness (n=113)	
	Mean±SD	Mean±SD	P value
Immature	5.39±3.00	5.77±2.12	0.3
Mature	6.13±2.10	6.11±1.5	0.9
Neurotic	6.17±2.37	5.93±1.05	0.4

Table (7) Clinical data of studied sample.

Parameters		Study group (n= 150)	
		N	%
Histopathological Diagnosis	Invasive Duct Carcinoma	128	85.3 %
	Lobular Carcinoma	13	8.7 %
	Metastatic Carcinoma	6	4.0 %
	Squamous cell carcinoma	3	2.0 %
Surgery	Conservative Breast Surgery	87	58.0 %
	Modified radical mastectomy	57	38.0 %
	no surgery	6	4.0 %

ER, (Estrogen Receptor); PR, (Progesterone Receptor); and HER2-neu (Human Epidermal growth factor Receptor2 neu).

The mean age of cancer onset was 50.07 ± 8.95 years; Invasive duct carcinoma was the commonest type (85.3%) of cancer found in patients. More than half of patients 87(58.0 %) underwent Conservative Breast Surgery (Table 7).

Assessment of personality by Structured Clinical Interview for DSM- IV Axis II (SCID-II) scores.

Table (8) Assessment of personality by Structured Clinical Interview for DSM- IV Axis II (SCID-II) scores.

	<i>Positive</i>		<i>Negative</i>	
	N	%	N	%
Cluster A				
Paranoid	15	10%	135	90 %
Schizoid	14	9.3 %	136	90.7 %
Schizotypal	2	1.3 %	148	98.7 %
Cluster B				
Histrionic	13	8.7 %	137	91.3 %
Narcissistic	1	.7 %	149	99.3 %
Borderline	28	18.7 %	122	81.3 %
Antisocial	0	0.0 %	150	100 %
Cluster C				
Avoidant	9	6 %	141	94.0 %
Dependent	25	16.7 %	125	83.3 %
Obsessive compulsive	33	22.0 %	117	78.0 %
Others				
NOS	3	2.0 %	147	98.0 %

The studied sample were assessed for personality by Structured Clinical Interview for DSM- IV Axis II (SCID-II). As regards to cluster A, it was noticed that paranoid criteria were found in (10 %) patients. In cluster B, borderline criteria were found in (18.7 %) patients. Thirty three (22.0 %) patients had obsessive compulsive criteria, while not otherwise specified criteria were in (2%) patients as shown in (Table 8).

Table (9) Comparison between Structured Clinical Interview for DSM- IV Axis II (SCID-II) scores and histopathological diagnosis in the whole sample.

	Invasive Duct Carcinoma		Lobular Carcinoma		Metastatic Carcinoma		squamous cell carcinoma		Chi-square Test	p- value
	N	%	N	%	N	%	N	%		
Avoidant	9	7.0%	0	0.0%	0	0.0%	0	0.0%	1.646	.649
Dependent	19	14.8%	6	46.2%	0	0.0%	0	0.0%	10.245	.017
Obsessive compulsive	29	22.7%	1	7.7%	3	50.0%	0	0.0%	5.170	.160
Passive Aggressive	11	8.6%	0	0.0%	0	0.0%	2	66.7%	14.553	.002
Depressive	13	10.2%	2	15.4%	0	0.0%	0	0.0%	1.422	.700
Paranoid	12	9.4%	0	0.0%	3	50.0%	0	0.0%	12.500	.006
Schizotypal	1	0.8%	0	0.0%	0	0.0%	1	33.3%	23.905	.000
Schizoid	13	10.2%	0	0.0%	1	16.7%	0	0.0%	2.131	.546
Histrionic	12	9.4%	1	7.7%	0	0.0%	0	0.0%	.951	.813
Narcissitic	0	0.0%	1	7.7%	0	0.0%	0	0.0%	10.609	.014
Borderline	25	19.5%	3	23.1%	0	0.0%	0	0.0%	2.295	.513
Antisocial	0	0.0%	0	0.0%	0	0.0%	0	0.0%	-	-
NOS	3	2.3%	0	0.0%	0	0.0%	0	0.0%	.526	.913

P value< .05

In comparing patients with breast cancer (according to socio-demographic characters) and histopathological diagnosis of cancer breast and type of personality measured by SCID-II , patients with invasive duct carcinoma had a significant higher score on passive aggressive (**P value= .002**), paranoid (**P value= .006**), schizotypal personality (**P value= .000**), and patients with lobular carcinoma had a significant higher score on dependent (**P value= .017**), and patients with squamous cell carcinoma had a significant higher score on schizotypal personality (**P value= .0 00**) as shown in (Table 9).

Table (10) Correlation between mature, immature and neurotic defenses assessed by DSQ and most common personality type assessed by SCIDII:

Variables		Obsessive	Borderline	Dependent
Matur	R	-.141	.070	.070
	P	.085	.393	.393
Immature	R	.053	.033	.184
	P	.522	.689	.024*
Neurotic	R	.214	.090	-.005
	P	.009**	.276	.948

P value<.05

In studying the correlation between defense mechanisms used by the patients in the study sample measured by DSQ-40 and personality measured by SCID II, female patients with **obsessive compulsive** personality had a positive correlation with neurotic defense mechanisms (**p value .009**), and female

patients with breast cancer with dependent personality had a positive correlation with immature defense mechanism (**p value .024**) and this difference was statistically significant as shown (Table 10) .

Table (11) Comparison between Structured Clinical Interview for DSM- IV Axis II (SCID-II) scores and type of surgery in the whole sample.

	Conservative Breast Surgery		Modified radical mastectomy		No Surgery		Chi-square Test	p- value
	N	%	N	%	N	%		
Avoidant	3	3.5%	1	1.8%	2	33.3%	13.934	.001
Dependent	17	20.0%	8	14.3%	0	0.0%	2.063	.357
Obsessive compulsive	15	17.6%	17	30.4%	1	16.7%	3.253	.197
PassiveAgreeive	9	10.6%	4	7.1%	0	0.0%	1.104	.576
Depressive	12	14.1%	3	5.4%	0	0.0%	3.538	.170
Paranoid	5	5.9%	9	16.1%	1	16.7%	4.110	.128
Schizotypal	1	1.2%	1	1.8%	0	0.0%	.180	.914
Schizoid	9	10.6%	2	3.6%	3	50.0%	13.822	.001
Histrionic	8	9.4%	5	8.9%	0	0.0%	.617	.735
Narcissitic	0	0.0%	1	1.8%	0	0.0%	1.636	.441
Borderline	22	25.9%	6	10.7%	0	0.0%	6.509	.039
Antisocial	0	0.0%	0	0.0%	0	0.0%	--	-
NOS	0	0.0%	3	5.4%	0	0.0%	4.977	.083

P value< .05

In comparing patients with breast cancer and type of personality measured by SCID-II , patients with no history of surgical interference for breast cancer had a significant higher score on avoidant (**P value= .001**) and schizoid personality (**P value= .001**) than other types of surgery as shown in (Table 11).

DISCUSSION

Our objectives were to study the prevalence and contributing factors of psychiatric comorbidity in patients with breast cancer. Our participants mean age was 51.67 years that was similar to the findings of previous studies where mean age of patients with breast cancer was 50.8 years (**19**).

We found higher rates of psychiatric comorbidity (73% of patients) than previously reported figures as

Fallowfield et al. (19) reported psychiatric comorbidity in 36.4% in their sample while **Shandilya et al.(20)** reported comorbid psychiatric disorders in 45% of their sample. These differences in rates of psychiatric comorbidity may be explained by the fact that at time of psychiatric screening in our study, 25% had stage IIIA, 16% had stage IIIB and 26% had stage IV of breast cancer indicating advanced stages of breast cancer. Moreover, more than half of our patients were living in urban areas experiencing stressful life events in a more sensitive way than those living in rural areas due to differences in medical and psychological knowledge as well as in social network and support (**19**).

As regards frequency of psychiatric comorbidity in patients with breast cancer and in agreement with previous studies that reported high rates of somatic symptoms (e.g. pain, fatigue, reduced energy and sense of weakness) (**22**), major depressive disorder (38.8%), generalized anxiety disorder (29.6%) and panic disorder (9.2%) (**21**), our patients were found to suffer from somatization (58.7%), depression (40.7%), hostility (25.3%), anxiety (24.7%), obsessive compulsive (23.3%), interpersonal sensitivity (18%), psychosis (16%), phobic anxiety (13.3%) and paranoid ideation (7.3%). Moreover, **Grabsch et al. (23)** reported depression and/or anxiety in 35.7% of breast cancer patients.

Probable contributing factors in psychiatric comorbidity

We tried to analyze each variable separately to find its impact on psychiatric condition of our participants but in fact these variables are interrelated and potential overlap cannot be completely avoided.

Defense mechanisms and premorbid personality

As invented by Sigmund Freud in his papers (**Freud, 1884, 1896**)^(8,9), the defense mechanisms were unconscious mental process that directed to modulate the expression of drives and impulses. Now this concept is expanded to involve the use of defense mechanisms as a reaction to external as well as internal sources of stress.

Our results revealed that, breast cancer patients with and without comorbid psychiatric illness used mature defense mechanisms more than other defenses.

This result was not compatible with the result of **Perry et al. (24)** found that female with breast cancer used higher immature and less mature and neurotic defense mechanisms. We can explain this difference by, 70% of our patients are married and

60% are employed. Moreover, more than half of the patients are technically and highly graduated. These factors may encourage our patients to deal with their illness in mature and balanced manner.

Our participants were frequently used pseudo-altruism, somatization, sublimation, rationalization, reaction formation, suppression and isolation of the affect respectively. In addition, patients with invasive duct carcinoma were significantly used isolation of the affect, splitting, somatization, rationalization, dissociation and sublimation; patients with squamous cell carcinoma were predominantly used projection, passive aggression, devaluation, denial, suppression, pseudo-altruism, anticipation and undoing; patients with metastatic carcinoma were significantly used devaluation, displacement.

Our findings were supported by the findings of **Saab et al.** ⁽²⁵⁾ who study the defense mechanisms functions in patients with breast cancer in Lebanon. They concluded that in spite of there is no specific pattern of the used defense mechanisms between patients with different tumor stages but with more advanced cancer stages the patients tend to use less adaptive defense mechanisms. In the same line we found that patients with metastatic carcinoma were significantly used neurotic defense mechanisms.

Personality characteristics are widely related to the pattern of used defense mechanisms. In the present study we noticed that (22%) of patients had criteria of obsessive-compulsive personality, (18.7%) had borderline criteria, (16.7%) had dependent criteria, (10%) had paranoid criteria, (9.3%) had schizoid criteria and (8.7%) had criteria of histrionic personality. However, the prevalence of personality disorder in general population according to DSM-5 were obsessive-compulsive (1%), borderline personality (2%), dependent personality (2.5%), schizoid (7.5%) and paranoid (2.3%). **Kernberg** ⁽²⁶⁾ has reported three types of personality organizations that reflect the individual's predominant psychological patterns and that are based on the individual's identity integration, used defense mechanisms and reality testing. The neurotic organization of personality is characterized by identity integration, a conserved capacity for reality testing and use of mature and neurotic defense mechanisms. Borderline personality organization is characterized by a failure in identity integration preservation of reality testing and in condition of distress they predominantly use immature defense mechanisms. The psychotic organization of personality is characterized by lack of ego boundaries, loss of reality testing, and use of immature and less adaptive defense mechanisms

Interestingly we found that our patients with non-operable advanced breast cancer were had criteria of avoidant and schizoid personalities. This finding may be explained by the influence of the avoidant and schizoid personality that led to delay the decision to seek medical advice for this sensitive area of the body.

Factors related to breast cancer characteristics and treatment:

Logistic regression analysis was conducted to reveal factors predicting psychiatric comorbidity as the dependent variable among different variables including in Arab individuals as well as the effects of socioeconomic status and methodological differences.

We believe that this area needs more extensive longitudinal multicenter research on larger samples in different countries and cultures to reveal the complex relationship between breast cancer, personality variables and psychiatric comorbidity.

Logistic regression analysis was performed with psychiatric illness as the dependent variable and sub items of SCIDII as independent variables. After adjusting for relevant confounding factors, dependent personality item in SCIDII score, was found to be an independent factors for Psychological illness.

CONCLUSIONS

Psychiatric comorbidity are common in patients with breast cancer. Patients without psychiatric comorbidity use mature defense mechanisms. In the present study we found that (22%) of patients had criteria of obsessive-compulsive personality, (18.7%) had borderline criteria, (16.7%) had dependent criteria Patients with non- operable advanced breast cancer had criteria of avoidant and schizoid personalities.

Conflict of interest The authors declare no conflict of interest.

Sources of funding This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author contribution Authors contributed equally in the study.

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