© Journal of the Indian Academy of Applied Psychology,
January 2007, Vol. 33, No.1, 61-71.

Psychopathology among Female Breast Cancer Patients

Umed Singh and **Nidhi Verma**

Kurukshetra University, Kurukshetra

Breast cancer is the second most common malignancy in women and second leading cause of cancer death in women. Like all chronic illnesses breast cancer also involves a series of threats and difficulties, which further lead to the development of mental problems in the patients. The present study is a venture to unfold the psychopathological profile of breast cancer patients. A sample of 140 breast cancer female patients aged 20 to 65 years was taken from the patients undergoing treatment in Rajiv Gandhi Cancer Institute and Research Centre, Delhi. The selected subjects were tested with Personality Assessment Inventory (PAI) and an interview was also conducted. The obtained data were processed by employing Product Moment Correlation, and Principal Component Factor Analysis. Factor analysis yielded five varimaxly rotated factors identified as (1) Subjective Somatic Distress and Affective Disruption; (2) Objective Distress; (3) Social Detachment,; (4) Dominance, and (5) Alcohol Abstinence. Extracted factors have accounted for 70.77% of total variance. These factors and contents of interview have revealed significant information about the psychopathology and other behavioural problems, the patients develop after being diagnosed for breast cancer.

***Keywords*:** Psychopathology, Breast Cancer

The term cancer refers to a heterogeneous group of more than 100 specific types of cancer that are characterized by dysregulated and rapid cell growth and the potential for invasive or metastatic growth (American Medical Association-AMA, 1989; Delhanty & Baum, 2001). Cancer damages the DNA inside cells. Cancer preys on the host and continues to grow indefinitely competing with normal tissues for nutrition. Types of cancer vary considerably with regard to risk factors, etiology, disease course, and treatment. Depending on the site of the original tumor, its size, or whether it has metastasized, different cancers follow different courses. Some cancers are extremely aggressive, follow a very predictable disease course, and appear to progress inexorably as a function of biological factors (Levy & Wise, 1987). Others, including breast cancer, follow more variable disease courses, appear to be less exclusively affected by tumor biology, and seem to be affected by other factors i.e. stress and psychosocial factors.

Breast cancer is the second most common malignancy in women and the second leading cause of death. Breast cancer is three times more common than all gynecological malignancies put together. The incidence of breast cancer has been increasing steadily from an incidence of 1:20 in 1960 to 1:8 women today. Breast cancer is not exclusively a disease of women. For every 100 women with

breast cancer, one male will also develop the disease.

Breast cancer is diagnosed in terms of various stages, which also help in the prognosis and in decision for treatment required. Stages are determined in terms of various staging systems, most pertinent are Duke's and Astler's collar staging system, Clark's level stsaging system, and TNM classification system. The most popular staging system is 'TNM' classification which describes size/number of the primary tumor symbolized by the letter 'T', whereas letter 'N' is denoted for lymph nodes, and the status of metastasis is denoted by letter 'M'. Stage 0 in the breast cancer is used to describe non-invasive breast cancer without evidence of cancer cells invading normal tissues. Stage I depicts invasive breast cancer consisting of tumor measured up to 2 centimeters, and no lymph nodes are involved. Stage II describes invasive breast cancer in which tumor measures between 2 and 5 centimeters, or the cancer has spread to the lymph nodes under the arm on the same side as the breast cancer affected lymph nodes have not yet struck to one another. Stage III is divided into subcategories known as 3A and 3B. Stage IIIA describes invasive breast cancer in which the tumor measures more than 5cms or the tumor has spread to lymph nodes and nodes are sticking to one another or surrounding tissue. Stage IIIB depicts breast cancer in which tumor of any size has spread to the breast skin, chest wall, or internal mamalary lymph nodes and includes inflammatory breast cancer. Stage IV is known as advance stage as it includes invasive breast cancer in which the tumor has spread beyond the breast and internal mamalary lymph nodes. Diagnosis of breast cancer involves the use of general medical examination and some specific laboratory techniques such as palpation, mammography, ultrasonography, fine needle aspiration, needle biopsy, and surgical biopsy. The prognosis of breast cancer depends on how early it is detected and its location (American Cancer society-ACS, 2000; Williams, 1990).

Like all chronic illnesses, cancer involves a series of threats and difficulties that change often getting worse overtime. Cancer creates unique stress for patients and their families. Not only the patients but their family members are also affected emotionally and psychologically when the diagnosis of cancer is made (Parkes, 1975). Investigators and clinicians have argued that the unexplained variance in the course of breast cancer may be due to psychological factors, and the impact of factors like stress on disease course at every stage of breast cancer. Positive relationship between psychological variables and the onset and progression of breast cancer has been established. So, many popular books and magazine' articles have instructed cancer patients that they can overcome cancer with thoughts or by reducing distress (LeShan, 1977; Siegel, 1986). Both the retrospective and prospective investigations have been made to understand relationship of stress and onset of breast cancer. These studies have produced variable results, with some studies reporting the positive association between stress and initial appearance of disease (Becker, 1979; Forsen, 1991), some finding that stress protects against cancer onset (Priestman *et al.*, 1985), and some finding no relation between stress and cancer diagnosis (Schonfield, 1975; Snell and Graham, 1971). Similarly some studies have examined women during the postoperative disease-free interval following surgery for breast cancer to understand the relationship between stress and reoccurrence of disease (Barraclough *et al.*, 1992; Ramirez *et al.*, 1989), which have produced the mixed results. Some investigators have used prospective designs in which participants were interviewed prior to learning their diagnoses. These studies revealed that, although the number of stressful life events reported was comparable among patients diagnosed with breast cancer and

those with benign lesions or healthy breasts, perceived severity of stressful events differed among the groups (Cooper *et al.*, 1986, 1989; Cooper and Faragher, 1993; Geyer, 1993). In general, more severe events were reported by women subsequently diagnosed with breast cancer than by women in control group (Cooper *et al.*, 1989). A higher proportion of women diagnosed with breast cancer reported suppressing emotions (especially anger) than those with benign disease (Greer and Morris, 1975; Wirsching *et al.*, 1982). Some of these studies have not found such effects (Schonfield, 1975). However, eliminating retrospective recall after diagnosis appears to have produced stronger evidence of stress-cancer link.

Although the evidence for a relation between stressful experiences and onset of breast cancer is weak, research examining the effects of stress on the progression of breast cancer is more promising. Partly it is because of the uncertainty about the events causing and characterizing initial development of tumors. Progression refers to the development and course of the disease. Consideration of progression of disease after detection and diagnosis bears the benefit of a clearer time frame. Abundant anecdotal evidences suggest that psychological factors can impact breast cancer progression. For example, two patients can present with identical tumor types, identical stages at diagnosis, and identical treatment histories and still have different disease outcomes. It is thought that some of this variance in outcome may be due to psychological factors. There are many stressors that face women diagnosed with breast cancer, including the fear of possible death, stress of informing family members, and the stress associated with being informed that their life is going to be drastically change. Disruption, social stigmatization, side effects of treatment, and other stressors more specific to the disease and treatment are also pertinent. These stressors can occur in the context of a disrupted family and other ongoing sources of stress. Treatment can also be extremely stressful. The initial choice between full mastectomy v/s breast conservation surgery can be a difficult decision, and women choosing breast conservation surgery have been found to have more short-term psychological symptoms than those choosing a mastectomy (Levy *et al.*, 1992). Anticipation of surgery as well as surgery itself can be extremely stressful, and it has been shown to decrease NK cell activity for as long as 24 hours post surgery, just when physician would want NK activity to be at its highest (Massie and Holland, 1991; Pollock *et al.*, 1991). Further, toxic side effects of chemotherapy can be so aversive that some patients believe they are worse than cancer itself.

Literature examining the effects diagnostic and treatment stressors on breast cancer progression has also implicated a number of moderator factors of relationship between stress and cancer progression. Among these notables are age, personality and coping styles, hostility, outlook, denial, social support, and perceived social support. Younger patients perceive breast cancer to be greater threat to their lives than older patients, and younger patients have been found to be poorer in mental health following diagnosis (Funch and Marshall, 1983; Vinokur *et al.*, 1990). Older age has been associated with age of more medications and greater limitation in activity, with better mental health and well being (Vinokur *et al.*, 1989). The type C personality has been found to describe a set of personality characteristics commonly seen in individuals diagnosed with malignant melanoma (Temoshok and Fox, 1984). Type C individuals are cooperative, unassertive, patient, compliant, and likely to suppress their emotions. Regarding the effect of hostility, it has been found that patients who report lower levels of hostility have shorter survival times than those who report higher levels of hostility (Derogatis *et al.,* 1979; Stavarky, 1968).

Having an optimistic outlook has been found to be associated with less distress (Carver *et al.*, 1993). Acceptance (accepting the reality of the situation) before surgery also predicts less post surgical distress. Similarly patients with fighting spirits have been found to be reporting better treatment outcomes than those with denial (Greer *et al.*, 1979, 1990; Pettingale *et al.*, 1985). Both the social support and perceived support have also been found to predict the positive treatment outcomes (Funch and Marshall, 1983; Levy *et al.*, 1990). Overall, the literature pertaining to the factors in progression, is conclusive that progression, rather than onset may be more influenced by psychosocial factors, and their effect, if any, on cancer, is prognostic rather than etiologic.

Psychiatric problems have been frequently reported in cancer patients (Derogatis *et al.*, 1983; Buckberg *et al.*, 1984), the most common of which are depression, anxiety, and adjustment problems as these patients having cancer recognize it as a 'real killer' and that can lead to intense pain, disability, disfigurement, sexual dysfunctions; and can lead to various problems if the outcomes are not as expected (Stanton *et al.*, 1998). Greer (1983) classifies psychiatric morbidity in relation to cancer in three types: (a) morbidity related to diagnosis, (b) related to treatment modality; and (c) related to terminal phases of cancer.

The common emotional reactions in patients diagnosed to have cancer are shock, denial, disbelief, anxiety, anger, guilt, and depression (Aitken *et al.*, 1959). The major sources of continuing emotional distress are fear of incurability, pain, disfigurement, recurrence of disease, and a sense of helplessness over its treatment. Among the psychiatric morbidity observed in the family members of cancer patients are enuresis, school phobia, and depression in the siblings, conversion reactions, psychosomatic, psychosexual, and psychosocial problems in the parents (Patel *et al.*, 1987; Greer, 1985), and anxiety and depression in the spouse.

Psychiatric morbidity associated with cancer therapies ranges from 18 to 40% (Morris *et al.*, 1977). Mastectomy, permanent colostomy, maxillofacial surgery, and hysterectomy have been studied well and reported to produce immense psychological impact on patients, like depressive illness, psychosexual problems, and social problems even suicide. Chemotherapy has been found to cause fatigue, nausea and irritability along with adverse effect on the sexual life, whereas radiotherapy causes nausea, peculiar denerving kind of fatigue, poor psychosocial adjustment (Hughes, 1982). The terminal phases of cancer cause organic brain syndromes (Greer. 1985) through metastasis and paraneoplastic syndromes. Severe cancer pain and other distressing symptoms like nausea, cachexia, and bowel changes are additional problems.

The problems are even among patients who go into remission and adapt well during the first months or years, the threat of recurrence looms and some individuals are psychologically paralyzed by their fear (Mages and Mendelsohn, 1979). How well patients adapt to having cancer can have medical consequences and affect the progression of the disease. Patients having high levels of hopelessness and depression do not survive as long as others do (Watson *et al.*, 1999). Patients having high levels of stress and do not cope well show poor immune system activity and some evidence suggests that cancer worsens more quickly if immune functions are impaired (Kiecolt-Glase and Glaser, 1986; Levy *et al.*, 1985; Redd *et al.*, 1991). Psychological factors also affect the exposure of a person to the carcinogens (smoking) by maintaining the behaviour pattern (psycho-maintenance), compliance with the treatment, and survival of the patient in an indirect way.

Adaptation of cancer can be very difficult for patients during the first several months and when their conditions worsen, their ability to adjust to their illness appears to improve with

time during remission or after a cure (Glanz and Lerman, 1992). The adaptation of cancer depends on many aspects of their illnesses and psychosocial situations such as emotional adjustment cancer victims achieve, depends on their age and physical condition. Those who are middle aged or physically impaired seem to fare worse than those who are older or less impaired (Vinokur, et al., 1990).

The present study is an attempt to have comprehensive understanding of spectrum of psychopathological problems; the breast cancer patients develop during the course of disease.

Method

Sample

One hundred forty breast cancer female patients under treatment in Rajiv Gandhi Cancer Institute and Research Centre, New Delhi constituted the sample. After due permission from hospital authorities, the patients who volunteered to participate, were included in the sample. The sample consisted of patients undergoing chemotherapy, surgery, radiation therapy, and pre-surgical preparation.

Measures

Selected subjects were tested with (i) Personality Assessment Inventory – Short Version (PAI, Morey, 1991), and (ii) Clinical Interview. Personality Assessment Inventory (PAI) by Morey (1991) is a self-administered objective inventory of adult personality designed to provide information on critical clinical variables. The PAI contains 344 items, which comprise 22 non-overlapping full scales: 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales. The validity scales are (1) Inconsistency (ICN), (2) Infrequency (INF), (3) Negative Impression (NIM), and (4) Positive Impression (PIM). Clinical scales consisting of somatic complaints (SOM), anxiety (ANX), anxiety related disorders (ARD), depression (DEP), mania (MAN), paranoia (PAR), schizophrenia (SCZ), borderline features (BOR), antisocial features (ANT), alcohol problems (ALC), and drug problems (DRG). Treatment consideration scales include aggression (AGG), suicidal ideation (SUI), stress (STR), non-support (NON), and treatment rejection (RXR). Interpersonal scales consist of dominance (DOM), and Warmth (WRM). In the present study PAI short form was used that consists of 160 items, which give estimates of scores for 20 of 22 full-scales. The short form should not be used if more than 8 of the first 160 items are not answered. The median internal consistency (coefficient alpha) for the 20 scorable scales is .76, whereas the median test-retest reliability equals to .91. It depicts that short form scores provide a reliable score that is reasonable approximation of what would be obtained from the administration of full-scale.

A clinical interview was conducted with the patients with a view to get some personal information, which were not obtainable through PAI. Patients, after proper rapport, were cross-examined for varieties of information particularly pertaining to marital relationship, perceived attitudes of family members to their illness, financial burden, attributions, and anticipated consequences of their illness

Results and Discussion

After ascertaining that the obtained data meet the requirement of applying Product Moment Method of correlation, Pearson's correlations were calculated among all the 20 variables of PAI used in the study from the raw scores. Degree of freedom being 138 (N-2) the coefficients of .16 and .21 were found to be significant at .05 and .01 levels of significance respectively. Intercorrelations among twenty variables of PAI are ranging from -.48 to .71. 130 of total 190 correlations are significant of which six are negative and remaining 124 are positive. Perusal of intercorrelations matrix reveals that PAI scales have shared substantial amount of their variance among themselves. Intercorrelations are presented in table 1.

Table 1 Intercorrelations Matrix

Vari	NIM	PIM	SOM	ANX	ARD	DEP	MAN	PAR	SCZ	BOR	ANT	ALC	DRG	AGG	SUI	NON	RXR	DOM	WRM
INF	31	09	16	24	15	14	42	46	37	30	23	08	21	42	16	27	-04	09	07
NIM	-	59	60	62	63	51	53	48	70	55	49	09	52	51	46	10	07	-00	13
PIM		-	37	67	59	41	47	45	47	51	23	06	40	44	48	-00	19	21	09
SOM			-	62	68	64	37	36	50	54	46	-07	48	36	30	10	19	-09	-09
ANX				-	67	71	55	38	68	66	37	15	41	59	62	02	26	08	12
ARD					-	62	60	42	63	61	52	03	46	44	46	02	11	05	22
DEP						-	39	24	56	48	23	28	29	31	53	02	15	-03	-13
MAN							-	53	68	55	45	16	30	68	30	12	21	28	06
PAR								-	48	40	29	11	28	36	22	31	12	23	11
SCZ									-	70	55	37	47	64	55	19	10	13	-12
BOR										-	54	07	57	63	47	07	16	05	-31
ANT											-	-24	57	68	14	29	08	-11	-48
ALC												-	-05	08	38	-12	-06	14	29
DRG													-	44	30	13	07	-18	-28
AGG														-	42	20	16	19	-26
SUI															-	-08	03	10	-13
NON																	--02	05	26
RXR																		- 14	-04
DOM																			-33

Factor Analysis

20 x 20 intercorrelations matrix was factor analyzed by applying Principal Component Method of Factor Analysis. Five varimaxly rotated factors have been extracted on the basis of Kaiser's (1960) criterion of eigen values greater than 1.00. The communalities are ranging from .535 to .826. The extracted five factors have accounted for 70.77% of total variance. The rotated factor matrix is presented in table 3.First principal component accounts for 38.84% of total variance. The factor highly loads on fourteen variables of PAI, namely somatic complaints, depression, anxiety, anxiety-related disorders, negative impression, positive impression, schizophrenia, borderline features, suicidal ideation, drug related problems, mania, paranoia, antisocial features, and aggression. All the significant loadings are positive. In terms of nature of markers, thisfactor is labeled as Subjective Somatic Distress and Affective Disruption. It replicates one of the exploratory factors located and reported by Morey (1991) from the data with PAI from various clinical groups.The obtained structure depicts the psychopathology,: the breast cancer patients develop after being informed of confirmed diagnosis. Such patients tend to report chronic somatic complaints affecting most of the organs and systems accompanied by fatigue and weakness interfering significantly in performance of role expectations.They report functional impairments, vague complaints of ill health and

Table – 2 Rotated Factor Matrix

Variables	I	II	III	IV	V	h^2
INF	.06	-.26	.66	.05	-.25	.578
NIM	.72	-.28	.26	. 02	-.11	.681
PIM	.65	-.16	.01	.39	-.05	.608
SOM	-.83	-.10	.15	-.09	.20	.777
ANX	.81	-.22	.04	.23	-.18	.798
ARD	.80	-.27	.08	.10	.01	.731
DEP	.82	-.01	-.06	-.03	-.23	.729
MAN	.41	-.42	.34	.46	.21	.719
PAR	.41	-.08	.61	.32	.11	.661
SCZ	.61	-.41	.33	.12	-.40	.821
BOR	.59	-.55	.13	.14	-.13	.704
ANT	.31	-.78	.27	-.06	.21	.826
ALC	.11	.18	-.03	.01	-.86	.790
DRG	.49	-.50	.17	-.19	.08	.565
AGG	.31	-.70	.29	.32	-.21	.818
SUI	.56	-.18	-.10	.08	-.55	.660
NON	.01	.03	.77	-.08	.18	.631
RXR	.22	-.03	-.19	.59	.32	.535
DOM	-.09	.13	.18	.77	-.21	.696
WRM	-.06	.76	.43	.18	-.18	.824
Eigen value	1.171	1.276	1.865	2.070	7.768	-
% variance	38.84	10.36	9.32	6.39	5.86	-
Cumulative % variance		38.84	49.20	58.26	64.91	70.77

Factor III named as **Social Detachment** accounts for 9.32% of total variance and resembles with one of the factors reported by Morey (1991), located in data from various clinical samples. It portrays the breast cancer patients who are having perceived lack of social support system, highly critical of themselves as well as others whom they perceive as uncaring and rejecting. They lack appropriate emotional resources for coping with crises and hence become highly reactive to stress. They tend to be careless and unpredictable in providing information about queries put to them because of being bitter and resentful of the way others have treated them. They tend to perceive their surrounding and people around with hyper-vigilance, persecution, and resentment. Interactionally they pose to be sympathetic, warm, and supportive to others but implicitly they are hostile particularly in reacting to the suggestions extended to them. They tend to exhibit attitudinal anger and aggression while discussing the general social issues.

Factor IV labeled as a factor of **Dominance** has accounted for 8.39% of total variance. The obtained structure describes the breast cancer patients who are likely to be self-assured, forceful, controlling, comfortable in social settings, domineering, intolerant of criticism and disagreement by others, generally satisfied with themselves as they are, and

preferring to interact with others, particularly in situations in which they can be in full control. They tend to have little motivation to have major changes in their behaviour and to enter into any treatment of their illness. They tend to show elevated mood, expansiveness, and grandiosity, heightened activity level and irritability. Through such activities they pose to give positive impression of themselves while interacting with others, but are very cautious during interpersonal interactions to have reasonable control over expression of their anger and hostility.

Factor V appears to be of **Alcohol Abstinence,** and has accounted for 5.86% of total variance. It provides the portrait of breast cancer patients who are having total abstinence from alcohol use and are free from suicidal ideation for their illness. Though they tend to have control over their thoughts and cognitions, but do not want to enter into any psychotherapeutic intervention for the correction of their behavioural problems, if any.

Patients were also interviewed to get some more information particularly pertaining to their marital relationship, family support, attributions, anticipated consequences of their illness and management of time. During interview different revelations were made by the patients below the age of 50 and those above the age of 50. Most of the patients above the age of 50 did not respond to the questions related to their marital and sexual functioning rather talked more of the consequences of their illness. They revealed the prevalence of death anxiety, intact social and family support from sons and daughters; and attributed their illness to God anticipating no positive outcomes of treatment. Most of their time, they invest in religious and worship activities, as reported. They were also worried of their husband's care after their demise. Most of them reported death as ultimate fate of their illness. On the other hand, patients in reproductive age below 50 hesitantly reported the decrease in their as well as partner's sexual functioning but none reported marital maladjustment. They do not suspect their partner for deceit in this regard, but reported the decrease particularly in the courtship behaviour by them. On their part, they perceived themselves to be loosing the erotic attraction, particularly after surgical removal of their breast/s. They reported full family support from in-laws, implicit death anxiety with positive anticipated treatment outcome. They are found to have generalized anxiety over future, career, and care of their children in case of their early demise. They were found to have strong desire for life, and to have consistent pray for their survival till the completion of academics and occupational settlement of their children. They reported to be aversive to over sympathy from some of their relatives. These age group patients tend to be less involved in religious and worship rituals as compared to those old patients.

Conclusions

In essence, the present study highlights the development of clusters of behavioural problems in breast cancer patients after being diagnostically informed. The problems that seem to comorbid with breast cancer include exaggerated unfavourable impression or malingering sometimes presentation of very favourable impression and reluctance to admit personal weaknesses, mental occupation with health matters and somatic complaints specific to somatisation and conversion disorders, observable signs of anxiety (cognitive, affective, physiological) and anxiety related disorders, depression, affective, cognitive, and behavioural symptoms of mania and hypomania, paranoid reactions, fluctuation and instability in interpersonal relations; unusual beliefs and perceptions, use of drugs to cope with disease produced distress aggression, suicidal ideation, implied hostility, generalized anxiety over future, and adaptation problems. Coping mechanisms of

patients below the age 50 years and those of above 50 are different. The present findings strongly imply that current and follow-up treatment for breast cancer must include appropriate psychotherapeutic intervention to facilitate the management of psychopathology developed during the course of disease. It will certainly lead to more positive treatment outcomes.

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Received: May, 28, 2006
Accepted: July 30, 2006

Umed Singh PhD**,** Department of Psychology, Kurukshetra University, Kurukshetra - 136 119

Nidhi Verma is Research scholar in the Department of Psychology, Kurukshetra University, Kurukshetra - 136 119