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Posttraumatic Growth and Psychological Distress among Female Breast Cancer Survivors in India: A Cross-Sectional Study

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Abstract

Introduction Breast cancer survivors (BCS) may experience a cascade of negative reactions during the entire treatment process in the form of psychiatric morbidity. However, exposure to a traumatic event also has the fertile ground for the potential to catalyze a host of positive changes, including development in personal, interpersonal, and spiritual levels, commonly referred to as posttraumatic growth (PTG). PTG is defined as "positive psychological change experienced due to a struggle with highly challenging life circumstances."

Objective This study aims to measure the prevalence and correlates of PTG among BCS.

Materials and Methods It was a cross-sectional study carried in a tertiary care center of North India from January 2021 to April 2021. Total 700 BCS were approached and screened using the purposive sampling technique. Data were analyzed using the *Statistical Package for Social Sciences*, version 20.

Results The mean age (standard deviation [SD]) of the patients was 43.14 (8.53) years. The mean (SD) PTG score was 37 (13.66). Among the subdomain of PTG, most respondents showed growth in personal strength, relating to others, followed by an appreciation of life, spiritual change, and less growth in new possibilities. PTG was found to be significantly positively correlated with treatment completion time ($r = 2.260$, $p = 0.02$) and negatively correlated with depression, anxiety, and stress ($r = -0.152$, $p = 0.04$; $r = -0.145$, $p = 0.05$; $r = -0.162$, $p = 0.02$).

Conclusion Psychological morbidities must be addressed along with medical treatment of breast cancer so that growth post trauma can be further facilitated.

Keywords
- breast cancer survivors
- posttraumatic growth
- psychological distress
- depression
- anxiety
- women
- body image disturbances

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Introduction

Breast cancer (BC) is the most common malignancy affecting millions of individuals worldwide.[1] Various therapeutic modalities are used to cure BC over an extended period.[2] Many psychiatric disorders are associated as a result of the diagnosis of BC.[3,4] This journey of the entire treatment procedure is difficult as it brings financial burden, disruption of family routine, disfigurement in the body, fear of recurrence (FORC), and death.[3–5]

Despite all the adverse outcomes, positive changes have been observed in survivors after BC's frightening and traumatic journey.[6] Different individuals use different coping mechanisms to deal with additional adversity of life like BC. A growing literature suggests the development of positive changes resulting from traumatic events known as posttraumatic growth (PTG). PTG is defined as "positive change in the individual's previous level of functioning aftermath a traumatic experience."[7] According to Tedeschi and Calhoun, PTG encompasses five domains of positive growth: more significant appreciation of life and a changed sense of priority; increased sense of personal strength; closer relationships with others; recognition of new possibilities for one's life; and spiritual growth.[7,8] Evidence from western literature suggests the development of PTG is associated with various demographic and clinical variables.[7,9,10] In the current study, we aimed to know the outcome of PTG among breast cancer survivors (BCS) and the relationship between PTG, psychological distress, body image disturbances, and demographic and clinical variables among women who have survived BC in Indian demography.

Methods and Materials

Sample and Procedure

A cross-sectional study was conducted during January to April 2021 in a tertiary care teaching hospital in North India. We have approached (matching the study population) 700 BCS for the study, treated in the institution from January 2016 to June 2020. We reviewed the patients' medical records to confirm the diagnosis, time of diagnosis, treatment method, and stage of cancer. The final study sample was selected based on inclusion and exclusion criteria (►**Fig. 1**). Patients were recruited using purposive sampling during their follow-up visits, and some patients were contacted using the telephone. We explained the purpose of the study to participants in their local language. Women between 18 and 60 years of age, diagnosed and treated for BC, and who have completed their active treatment for at least 3 months (surgery, chemotherapy, and radiotherapy) were included in the study. Patients with metastasis, recurrent cancer, and receiving treatment for any psychiatric comorbidities were excluded from the study. To ensure anonymity, we included no names or other identifying information in the questionnaires or database.

Measure

Patients were assessed using a semi-structured proforma for socio-demographic and clinical details. PTG was measured

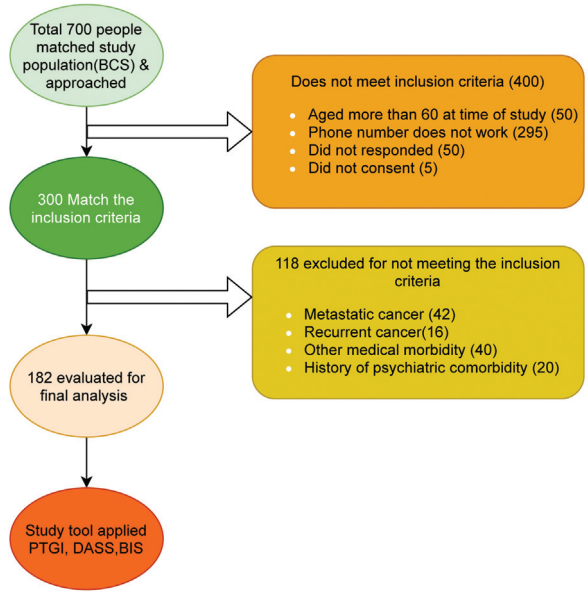

Fig. 1 Recruitment process of the samples. BIS, Body image scale; DASS-21, Depression, Anxiety, and Stress Scale; PTGI, Posttraumatic Growth Inventory Short Form.

using posttraumatic growth inventory (PTGI-10 item).[11] Psychological distress was measured using the depression, anxiety, and stress scale (DASS-21) comprising 21 articles.[12] Body image disturbances were measured using a 10-item body image scale.[13] All the tools were administered by the interviewer (mental health professional). Patients found to be positive for any psychiatric morbidity were referred to the department of psychiatry for further consultation.

Depression, Anxiety, and Stress Scale (DASS-21)

The DASS-21 is a self-report questionnaire consisting of three dimensions of negative emotional states: depression, anxiety, and stress/tension (Lovibond and Lovibond, 1995; Page et al., 2007).[41] Seven items measure each dimension, and each item is calculated using a 4-point Likert-type scale, ranging from 0 ("did not apply to me at all") to 3 ("applied to me very much, or most of the time"). Scores of at least 10 for depression, 8 for anxiety, and 15 for stress indicate clinical levels of distress for each subscale, respectively. The DASS-21 has good reliability and validity, and we found it to be moderately sensitive to change (Page et al., 2007).[41]

Posttraumatic Growth Inventory Short Form (PTGI-SF)

The PTGI (Steffens and Andrykowski, 2014; Tedeschi and Calhoun, 1996[8]) assesses personal growth that can arise from the experience of cancer. While the original PTGI scale has 26 items, the PTGI short form (PTGI-SF[11]) consists of 10 items to measure 5 subscales: new possibilities, relating to others, personal strength, appreciation of life, and spiritual change. Each item is scored on a 6-point Likert scale on the basis of the degree of change that has occurred for the participants concerning that item, ranging from 0, "No change," to 5, "Change to a very great degree." The total score ranges from 0 to 50, with a higher score indicating a higher level of PTG. The

PTGI-SF has been found to have good internal reliability ($\alpha = 0.72–0.89$), and the adjusted correlations between the PTGI and PTGI-SF total scores were consistently near or above 0.90.

Body Image

The 10-item body image scale was developed as a unitary measure to measure body image distress, including influence, actions, and cognition, and has been commonly used in oncology contexts. Participants assessed the degree to which they agreed with statements on a 4-point Likert scale, such as "Did you feel self-conscious about your appearance?" (0, not at all, to 3, very much). The total summary scores will range from 0 (no distress) to 30 (high body image distress). This scale demonstrates high reliability ($\alpha = 0.93$) of the item and strong clinical validity and alteration sensitivity. In the current analysis, the item reliability of this scale was high ($\alpha = 0.94$).

Statistical Analysis

Statistical analysis was performed using SPSS-20 software. The continuous variables were compared using the *t*-test, and the ordinal and nominal variables of the two groups were compared using the Chi-square test. We studied the relationship between various domains of PTG and body image and other variables using the Pearson correlation coefficient.

Ethics

The procedures followed were as per the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1964, as revised in 2013. The present study was approved by the Institutional Ethics Committee of King George's Medical University, Lucknow, Uttar Pradesh, India, dated January 22, 2021 (Ref code: 104th ECM IIA/P14). Informed consent has been obtained from the patients.

Results

Total 700 BCS were selected for the study. We applied inclusion and exclusion criteria to the subjects. Final analyses were used on 182 BCS. The recruitment process is presented in ►**Fig. 1**.

Socio-Demographic and Clinical Details of the Study Sample

The mean (standard deviation [SD]) age of the patients was 43.14 (8.53) years. The majority of the patients in the study were housewives 175 (96.2%), not literate 56 (30.8%). The majority (180, 98.9%) of the patients were married and belonging to Hindu religion (142, 78%), living in a joint family (127, 69.8%), from an urban and semi-urban background (118, 69.7%), and with monthly family income ranging between 5,000 and 10,000 Indian rupee (127, 69.8%).

The mean (SD) duration of completion of treatment was 13.05 (10.54) months, with a median of 12 ranging from 4 to 64 months. We found family history negative for cancer and other psychiatric morbidities in 175 (96.2%) and 164 (90.01%) of subjects, respectively. The majority of the patients were diagnosed at the third stage of malignancy (99, 54.4%). More than half of the women, 105 (57.7%), were in premenopausal status. The majority, 168 (92.3%), of the patients expressed FORC of BC.

Table 1 Clinical characteristics of breast cancer survivors ($n = 182$)

Variables		Mean (SD)
Posttraumatic growth/subdomain		37.00 (11.38)
1. Relating to other		8.56 (2.45)
2. New possibilities		6.71 (2.68)
3. Personal strength		8.67 (2.36)
4. Spiritual change		8.43 (2.18)
5. Appreciation of life		8.62 (2.30)
Psychological distress	Depression	10.43 (9.76)
	Anxiety	6.06 (5.43)
	Stress	9.97 (6.06)
Body image score	Body image score among MRM + BCS patients	18.40 (8.52)
	Body image score among MRM patients	20.34 (6.48)

Abbreviations: BCS, breast conservative surgery; MRM, modified radical mastectomy; SD, standard deviation.

Prevalence of Depression, Anxiety, and Stress and Body Image Disturbances

The prevalence of depression, anxiety, and stress in our study (29.11%, 33.5%, 25.25%, respectively) in majority of the patients was with mild severity (►**Table 2**). The mean (SD) body image score was 20.30 (6.48).

Posttraumatic Growth and Its Correlate

The mean PTG score of our study population was 37.0 (11.38). The mean scores of the subdomains of the PTG were as follows: appreciation of life, 8.56 ± 2.30; relating to other, 8.56 ± 2.45; spiritual strength, 8.43 ± 2.18; personal strength, 8.67 ± 2.36; and new possibilities in life, 6.71 ± 2.68 (►**Table 1**).

PTG score was found to be positively associated with treatment completion time and negatively correlated with anxiety, depression, and stress. PTG was not found to correlate with age and body image score (►**Table 3**).

Discussion

This study was performed to observe PTG and the subdomains of the PTG (appreciation of life, spiritual change, personal strength, new possibilities, and relating with others) and its relationship with different demographic and clinical variables among BCS, and how psychological distress and body image disturbances are associated with PTG.

Table 2 Frequency and percentage of severity of anxiety, depression, and stress

Clinical variable/ severity ($n = 182$)	Depression: *n* (%)	Anxiety: *n* (%)	Stress: *n* (%)
Normal	129 (70.09)	121 (66.05)	136 (74.07)
Mild	33 (18.01)	31 (17.0)	39 (21.04)
Moderate	8 (4.04)	23 (12.06)	6 (3.03)
Severe + very severe	9 + 3 (6.05)	6 + 1 (3.08)	1 (0.5)

Table 3 Correlation between posttraumatic growth and different clinical variables

Variable		*r*, *p*
Posttraumatic growth	Treatment completion time	$r = 2.260$, $p = 0.02$
	Depression	$r = -0.145$, $p = 0.05$
	Anxiety	$r = -0.152$, $p = 0.04$
	Stress	$r = -0.162$, $p = 0.02$

Note: Significant at 0.05 (only significant values depicted).

Demographic and Clinical Variables

The mean (SD) age of the patients was 43.25 (8.53) years. This could be due to the higher incidence of BC in this age group.[1] The demographic characteristics of our study population are similar to the demographic details of studies conducted in North India.[3,14] The mean duration of the completion of treatment in this study group was 13.05 ± 10.54 months. This could be due to predefined selection criteria, according to which we had only included patients whose active treatment was completed at least 3 months before data collection time. The majority of the patients were diagnosed in third stage of malignancy (54.04%). Late presentation of the patients at treatment care facilities generally attributed to the following reasons, as represented by the previous research studies: poor financial status, lack of awareness, and lack of resources in nearby treatment facilities; this can be the possible reason for the majority of the patients being in third stage of malignancy.[1,15] More than half (57.7%) of the women in our study were in premenopausal status. This can be because the mean age of menopause among Indian women ranges between 41.9 and 49.4 years.[16] The majority of the patients expressed fear of recurrence (FORC) of BC. It has been a significant finding in our study, which shows that survivors have many underlying concerns such as FORC, resulting in psychological disturbances and decreased quality of life.[17] Literature suggests cancer patients considered FORC as one of their most frequent unmet supportive care needs, and FORC is present at a higher level in 40 to 60% of patients and at lower levels in almost all the patients.[17–19]

Posttraumatic Growth

The mean PTG score of our population was 37 (SD: 11.38). The mean score was higher compared with previous literature.[20–22] The higher score can be a reasonable adjustment with the illness over a while as our posttreatment population ranges from 4 to 64 months. Research suggests better PTG over a longer period.[23–25] Further, most of the studies have reported a positive association of marriage with PTG and marital status as a predictor for PTG.[9,10] Since most of the participants in our study were married, this can be the reason for higher scores in the PTG domain.

Our synthesis suggests more or almost equal growth in the subdomains of relating to others, appreciation of life, spiritual changes, and personal strength. Findings are congruent with previous studies.[25–28] The mean (SD) score of *personal strength* was 8.67 (2.36). The *personal strength* domain explains knowing own strength to cope with adversity.[7,8] Ability to cope with stressful situation tends to the development of confidence in oneself.[29,30] The mean (SD) score for *appreciation of life* was 8.56 (2.30). A possible explanation for the high score in the domain of *appreciation of life* is that when patients tend to come out of the adversity successfully, they start appreciating life. After all the ups and downs associated with the treatment process and illness, people start appreciating the value of life and become extra careful with how they live now. The mean (SD) score for *relating to others* was 8.56 (2.45). *Relating to other* domain explains the support they receive from the family, friends, and other support groups while going through the treatment, which might have improved their interpersonal relationship leading to a high score in the domain representing relations.[8,31] The mean (SD) score for *spiritual changes* was 8.43 (2.18). Previous literature has reported religious beliefs among cancer patients, showing that religious beliefs help positively cope with adversity, as people start thinking it is a curse from God or the punishment of their previous life karma. Only God is the last resort for their problems.[22,32,33] The growth in these areas is reported to be less in previous research studies.[24,34,35] We can explain this based on the different demography of the Indian subcontinent and cultural values, where spiritual beliefs and family support are a crucial part of the value system leading to positive growth. The mean (SD) score for *new possibilities in life* is 6.71 (2.68). The mean score was comparatively less in the *new possibility* domain since older adults are more affected with BC considering the mean age, and cognitive rigidity and lesser interest in new avenues lead to less growth in this area.[24,34] At the same time, results were contrary to Sharma and Zhang (2017), where new possibility scores were more.[22]

PTG score was positively associated with treatment completion time, which is consistent with the theory of *Tedeschi and Calhoun* (1996)[8] that growth appears with time from the traumatic event.[6,7] This means that the longer a woman survives from BC, the higher the chances of developing PTG. Previous findings suggest higher PTG development in the women who have stayed for longer than 5 years post treatment comparing women who have survived below 5 years. As our study also includes the same age group, this can be the reason

for the findings. Another reason can be because the stretch of the year lived post treatment is more prolonged, where they become confident over a while about the future.[22,25,36–38] However, the other findings are not supported by the results, which show an inverse relationship between time since diagnosis and PTG.[22,39] PTG is negatively correlated with anxiety, depression, and stress. Results are in line with previous literature,[22,24,39] which reveals more scores in PTG are associated with less severity of psychological distress or chances of having psychological distress. It was evident from earlier studies that positive coping results in reducing pain, which supports the results. PTG is the outcome of a positive coping mechanism, which could help minimize distress.[32] Further, multiple reasons cause the stress to be eliminated, such as reduced financial cost associated with treatment, recovery from cancer, and adjustment with illness over some time, which also support the synthesis.

PTG was not found to be correlated with age**,** suggesting a lack of relationship between age and PTG, which is similar to other data.[25,37] However, some findings contradict our current findings where results differ in the relationship between age and PTG, revealing that the younger generation is correlated with the amount of PTG than older individuals.[7,22,24,40] Body image score was also not found to be associated with PTG, which suggests no association between PTG and body image score. These are two different variables independent of each other.

Since the study was conducted in a single facility with outpatients, the use of a small sample was one of the limiting factors for the generalization of the results. Also, some treatment variables like chemotherapy and hormonal therapy may impact the outcome of PTG, which was not addressed in this study. Further, longitudinal studies on a larger population are needed to ascertain our findings. Research should be focused on results predicting the protective factor for PTG and association with demographic and clinical variables. Considering the sociocultural background, healthcare workers should promote positive coping and identify factors that may lessen or enhance PTG.

Conclusion

Taken together, the current study suggests that BC survivors may experience protracted adverse effects in the form of psychological distress and body image disturbances, while PTG may also occur at the same time as a positive outcome of a negative experience. Hence, consistent psychological help should be available/given to all patients irrespective of their treatment status, that is, after diagnosis, during treatment, and post treatment.

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Presentation at a Meeting
None.

Conflict of Interest
None declared.

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