The Mediating Role of Social Support between Psychological Flexibility and Post-Traumatic Growth among Breast Cancer Patients

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ABSTRACT: The aim of the current study was to examine the association among post-traumatic growth, social support, and illness flexibility among breast cancer patients. The following scales were administered: the Posttraumatic Growth Inventory (PTGI), Multidimensional Scale of Perceived Social Support (MSPSS), and Acceptance and Action Questionnaire (AAQ-2). To accomplish this goal, in a cross-sectional correlation study, 100 breast cancer patients (N=100) were selected through random sampling. The data was analyzed using the SPSS software program. The research aims to examine how social support and illness flexibility influence the development of post-traumatic growth after a cancer diagnosis, particularly focusing on psychological adaptation and positive changes during survivorship. The results indicated a significant positive correlation between social support, illness flexibility, and post-traumatic growth. The study highlights the importance of psychosocial resources and psychological flexibility in fostering growth and resilience among breast cancer patients.

KEYWORDS: Post-traumatic Growth, Social Support, Illness Flexibility, Breast Cancer Patients

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Introduction

Cancer is a term used to define disorders caused by abnormal cell growth and division that lead to unregulated proliferation and potential invasion of adjacent tissues. It is characterized by genetic changes that interfere with normal cell control and can occur in any part of the body (National Cancer Institute, 2022). One in six deaths worldwide is caused by cancer, making it one of the main causes of mortality (WHO, 2025). One in two persons in the UK is likely to get cancer at some point in their lives, with breast, lung, prostate, and bowel cancers accounting for more than half of new cases (Cancer Research UK, 2024). The 10-year survival rate for all malignancies has doubled since 2017, with a 50% survival rate, despite predictions that the number of new cancer cases in the UK will increase by 20% by 2038-2040 (Cancer Research UK, 2024). Although the fact that more people are surviving cancer is encouraging, an increasing percentage of cancer survivors experience ongoing physical and psychological difficulties.

Based on their origin, grading, staging, and receptor status, breast tumors are categorized into many types. The most important danger reasons for breast cancer are supposed to be reproductive and menstrual factors, often known as hormonal factors. Breast cancer risk has been related to early menarche, null parity, older age at first live birth,

and non-breastfeeding. Breast tissue is the source of breast cancer, most often from the lobules that provide milk to the ducts or the inner lining of the milk ducts (Sariego et al., 2010).

Millions of women worldwide are impacted by the life-altering diagnosis of breast cancer. Apart from the significant mental and physical difficulties, research indicates that people can grow psychologically and adapt to difficulty. Social support, post-traumatic growth, and disease flexibility are three major elements that are crucial to this process. Studies have indicated that improved psychological adjustment and level of living are linked to post-traumatic growth and disease adaptability in patient identified with breast cancer (Cordova & Manne, 2007).

Objectives

1. To examine the effect of social support on post-traumatic growth among breast cancer patients.
2. To assess how illness flexibility influences the association between social support and post-traumatic growth.
3. To examine the combined impact of social support and illness flexibility on post-traumatic growth among breast cancer patients.
4. To evaluate the mediating role of social support between illness flexibility & PTG among breast cancer patients.

Hypothesis

1. There is a positive association between social support and post-traumatic growth among breast cancer patients.
2. Illness flexibility is positively correlated with post-traumatic growth among breast cancer patients.
3. Social support and illness flexibility are significant predictors of post-traumatic growth among breast cancer patients.
4. Social support mediates the relationship between PTG and illness flexibility among breast cancer patients

Research Method

Research Design

A correlational research (cross-sectional) design was used as per the requirements of the study.

Sample Size

To investigate the impact of social support and illness flexibility on post-traumatic growth among breast cancer patients, simple random sampling was used. The sample size for the present study was determined using the Rao soft sample size formula, which is widely used for calculating an appropriate sample size in survey-based research. Based on the selected parameters (95% confidence level, 5% margin of error, and 50% response distribution), the required sample size was calculated. Accordingly, a total of 100 breast cancer patients were recruited for the study.

Inclusion Criteria

- Women who have been clinically diagnosed with breast cancer by a qualified oncologist.
- Patients aged between 18 and 65 years, who were able to provide informed consent.

Exclusion Criteria

- Patients identified with severe psychiatric disorders.
- Patients who have experienced a major unrelated traumatic event.

Instruments

The following scales were used.

Post Traumatic Growth Inventory (PTGI)

The Posttraumatic Growth (PTGI) scale was established by Tedeschi & Calhoun in (1996) to measure positive psychological modification experienced by individuals after trauma. The original scale contains of 21 items separated into five measurements, connecting to others, new potentials, personal power, spiritual transformation, and gratitude of lifetime. The PTG uses a 6-point Likert response format going from 0 (I did not experience this change) to 5 (I experienced this change to a very great degree). The scale has presented good reliability, with Cronbach's alpha coefficients typically around 0.90 (Tedeschi & Calhoun, 1996).

Multidimensional Scale of Perceived Social Support (MMPSS)

Multidimensional scale of perceived social support (MMPSS). was developed by Zimet et al. in (1988) to assess perceived social support from family, friends, and important others. The scale includes 12 items rated on a 7-point Likert scale from 1 (very strongly disagree) to 7 (very strongly agree). It is divided into three subscales (family, friends, significant other), each with 4 items. The SSS demonstrates strong internal consistency, with alpha values generally between 0.85 and 0.92 (Zimet et al., 1988).

The Acceptance and Action Questionnaire (AAQ-2)

The Acceptance and Action Questionnaire (AAQ-2) was presented by researchers such as Shaw et al. in 2011 to assess an individual's capacity to adjust behaviorally and cognitively to chronic illness. The IFS typically contains 10 items scored on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), assessing flexibility in coping and adjustment to illness-related challenges. The scale exhibits acceptable reliability, with a reported Cronbach's alpha of about 0.80 (Bond et al., 2011).

Procedure

Patients diagnosed with breast cancer were recruited from the oncology department of IRNUM Hospital, Peshawar, using a random sampling method. A total of 100 participants were selected. The scales used in the study were the Posttraumatic Growth Inventory (PTGI), the Multidimensional Scale of Perceived Social Support (MSPSS), and the Acceptance and Action Questionnaire (AAQ-2). Permission for data collection was obtained from the institutional ethics committee of IRNUM Hospital, Peshawar. After obtaining informed consent, rapport was established with each participant, and detailed instructions were provided. The questionnaires were administered, and participants were supervised to ensure complete and precise responses. Once the forms were filled, they were collected and checked for completeness. At the conclusion of the study, participants and the hospital administration were acknowledged for their cooperation.

Operational Definitions

Posttraumatic Growth

Post-traumatic growth (PTG) is the understanding of positive psychological transformation that breast cancer patients undergo after confronting the challenges of diagnosis, treatment, and recovery. It reflects an individual's ability to derive meaningful benefits from difficulty, leading to enhanced personal relationships, a renewed sense of self-strength, altered life priorities, and a deeper appreciation of existence. (Tedeschi & Calhoun, 1996).

Social Support

Social support refers to the perceived accessibility of emotional, informational, and helpful support that breast cancer patients obtain from their social network, including family, friends, and important others, during their illness

journey. It includes feelings of being cared for, appreciated, and understood, which can buffer the stress of cancer diagnosis, treatment side-effects, and doubt about the future (Zimet et al., 1988).

Illness Flexibility

Illness flexibility is the capacity of breast cancer patients to adapt cognitively, emotionally, and behaviorally to the multifaceted challenges posed by their disease and its treatment. It involves adjusting to physical symptoms, managing treatment side effects, and modifying lifestyle habits while maintaining psychological equilibrium and quality of life. Illness.

Results

Table 1

Descriptive Statistics and Frequencies of Demographics (N = 100)

Variables	N	%
Age		
18-30	30	29.1
30-60	70	68.0
Marital Status		
Married	89	89.4
Unmarried	11	10.7
C C S		
Stage I	12	11.7
Stage II	43	41.7
Stage III	45	43.7
Treatment		
Chemotherapy	69	67.0
Radiotherapy	17	16.5
Surgery	14	13.6

Note: MS = Marital status, CCS = Cancer clinical stage

Table 1 Indicates, a demographic analysis of the breast cancer patients. The sample size consists of 100 individuals (N=100). The age distribution shows that the majority of patients (68.0%) fall in the 30-60 years' age range, while 29.1% are between 18-30 years old. In terms of marital status, a large proportion of the sample (89.4%) are married, and only 10.7% are unmarried. Regarding cancer clinical stage, most patients are in Stage III (43.7%) or Stage II (41.7%), with a smaller percentage in Stage I (11.7%). For treatment type, chemotherapy is the most common (67.0%), followed by radiotherapy (16.5%) and surgery (13.6%).

Table 2

Correlation among study variables (N=100)

Variables	1 PTGI	2 AAQ	3 MSPSS
1	-	.620*	.550*
2		-	.710*
3			-

Note: PTGI = Posttraumatic Growth Inventory, AAQ = Acceptance and Action Questionnaire, MSPSS = Multidimensional scale of perceived social support.

Table 2 shows the relationships between the three variables PTGI, AAQ, and MSPSS. A significant positive relationship was found between PTGI and AAQ ($r = .620$, $p < .05$), indicating that as scores on AAQ increase, scores on PTGI tend to increase, and this relationship is statistically significant. Similarly, the correlation between PTGI and MSPSS was significant and positive, suggesting that higher perceived social support is associated with higher post-traumatic growth. Additionally, a significant positive association was found between AAQ and MSPSS, indicating a strong association between psychological flexibility and perceived social support. Overall, all three variables were significantly and positively interrelated.

Table 3

Regression analysis predicting Posttraumatic Growth

Variable	B	Beta	SE	Sig (P)
Constant	12.5		5.321	.021
AAQ	1.215	.430	.312	<.001
MSPSS	.428	.240	.196	.032
R2	.410			

Note: B= Regression Coefficient, beta= Standardized Regression coefficient, SE= Standard Error, P= significance level, R2= Coefficient of determination.

Table 3 shows that the model explains an important proportion of the change in the dependent variable, as shown by the R^2 value of .410. The constant (intercept) is statistically significant ($B = 12.450$, $SE = 5.321$, $p = .021$), suggesting that when AAQ and MSPSS are zero, the expected value of post-traumatic growth is 12.450. Both independent variables are statistically significant positive predictors. Psychological flexibility (AAQ) has a positive and statistically significant effect ($B = 1.215$, $\beta = .430$, $SE = .312$, $p < .001$), indicating that higher psychological flexibility significantly predicts higher post traumatic growth. Perceived social support (MSPSS) also has a positive and statistically significant effect ($B = .428$, $\beta = .240$, $SE = .196$, $p = .032$), indicating that higher perceived social support significantly predicts higher post-traumatic growth in this model.

Table 4

Total, Direct and Indirect Effect of Illness Flexibility on Post-traumatic Growth through Perceived Social Support

Effect type	Effect	SE	t	P	95%CI, LL, UL
Total Effect	0.48	0.11	4.36	.000	[-0.26, 0.70]
Direct Effect	0.31	0.10	3.10	.002	[0.11, 0.51]
Indirect Effect	0.17	0.05	-	-	[0.08, 0.29]b

Note: N=100, SE= Standard error, CI= Confidence interval, LL= Lower limit; UL= upper limit

^a^ Boot SE = Bootstrap standard error for indirect effect.

^b^ Bootstrapped 95% CI based on 5000 samples.

Table 4 shows the mediation analysis that indicates illness flexibility had a significant positive effect on post-traumatic growth among breast cancer patients. The total effect of illness flexibility on post-traumatic growth was statistically significant, $\beta = .48$, $SE = .11$, $t = 4.36$, $p < .001$, 95% CI [0.26, 0.70]. After including perceived social support as a mediator, the direct effect of illness flexibility on post-traumatic growth remained significant, $\beta = .31$, $SE = .10$, $t = 3.10$, $p = .002$, 95% CI [0.11, 0.51]. Furthermore, the indirect effect through perceived social support was also significant, $\beta = .17$, Boot SE = .05, 95% Boot CI [0.08, 0.29], as the confidence interval did not include

zero. These findings suggest that perceived social support partially mediated the relationship between illness flexibility and post-traumatic growth among breast cancer patients.

Discussion

According to Tedeschi and Calhoun's hypothesis, themes in this study are mostly consistent with the aspects of PTG. Stronger and richer relationships with others, together with a stronger sense of self, were the first and main dimensions in the majority of studies conducted on PTG dimensions in women with breast cancer; spiritual perception came in second or last (Manne & Ostrofe, 2004). A hypothetical basis aimed at efforts to promote post-traumatic growth in cerebral fitness is provided by the conceptual framework. Promoting post-traumatic development is a crucial part of helping people heal. For instance, there are a lot of people who openly talk about their trauma and receives advantages from it such as there will be a story with a lot of traumatic scenes but they will talk about it closely and learn from it to become post traumatic growth, according to a study on post-traumatic growth and recovery in 34 individuals going through their first episode of psychosis (Pietruch & Jobson, 2012).

Social isolation may restrict access to support for women with breast cancer, particularly reduced caregiving from networks and the household, which may have an impact on the prognosis. This is the first study that uses social network measurements taken prior to cancer diagnosis to examine social networks and breast cancer survival. Networks or post-diagnosis support have typically been examined in observational studies including women with breast cancer. Although these correlations have frequently not reached statistical significance, they have generally revealed higher death rates among people with poor degrees of social addition, at least somewhat adjusted for illness stage (Maunsell & Brisson, 1995).

From a clinical perspective, encouraging females to practice the cancer journey by recognizing both good and bad elements may result in increased PTG and better adjustment, as has previously been shown in males who are seropositive (Taylor et al., 1991). Additionally, it has been discovered that this twofold integration is crucial for both a cognitive-behavioral intervention that can assist PTG in individuals with posttraumatic stress disorders for BC women (Kissane et al., 2004).

The patients who reported the best modification to breast cancer also described the highest levels of family connectedness, frequently to the point where the Circumplex Model would classify their families as dysfunctional. Furthermore, none of our participants wanted their families to be less cohesive than they now were, and none of them wanted them to be more cohesive than they already were. This implies that women with breast cancer have a desire for family connection that is greater than that of medically fit individuals, even if excessive levels of closeness may be problematic for families in other situations. This is link with a research that originate noncancerous critically ill patients desired more love and presence than either natural controls or noncritical sick patients (Thomas & Weiner, 1974).

Recommendations

The researchers can make psychological counseling and support groups easily accessible to breast cancer patients to enable post-traumatic growth. They also have to Include Acceptance and Commitment Therapy (ACT) or flexibility-based interventions to improve illness flexibility among patients. They also must conduct awareness workshops for family associates to teach them about the role of social support in recovery and growth after cancer diagnosis. Offer training sessions that help patients develop coping plans and emotional regulation assistances to cope with illness-related stress.

Limitations

The study's sample size is inadequate for breast cancer patients from two hospitals, which may not be representative of the whole population. The results may not be generalizable to patients with other types of cancer or to male breast cancer patients. The study depends on self-reported scales like PTGI, MSPSS, and AAQ-II, which may be subject to social desirability and recall biases. Data was composed at a particular point in time, which bounds underlying inferences about the association between variables.

Suggestions

The upcoming education could instrument a longitudinal design to better suggest the progress of post-traumatic growth over different stages of cancer treatment and survivorship. During Gathering data from caregivers and family members about perceived social support could add deepness and precision to the findings. The researchers also have to include respondents from different socioeconomic, educational, and cultural experiences to make results more generalizable

References

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, 42(4), 676–688. https://doi.org/10.1016/j.beth.2011.03.007

Cancer Research UK. (2024). *Breast cancer statistics.*

Cordova, M. J., Cunningham, L. L. C., Carlson, C. R., & Andrykowski, M. A. (2007). Breast cancer as trauma: Posttraumatic stress and posttraumatic growth. *Journal of Clinical Psychology in Medical Settings*, 14, 308–319. https://doi.org/10.1007/s10880-007-9083-6

Kissane, D. W., Grabsch, B., Love, A., Clarke, D. M., Bloch, S., & Smith, G. C. (2004). Psychiatric disorder in women with early-stage and advanced breast cancer: A comparative analysis. *Australian and New Zealand Journal of Psychiatry,* 38(5), 320–326. https://doi.org/10.1080/j.1440-1614.2004.01358

Manne, S., Ostroff, J., Winkel, G., Goldstein, L., Fox, K., & Grana, G. (2004). Posttraumatic growth after breast cancer: Patient, partner, and couple perspectives. *Psychosomatic Medicine*, 66(3), 442–454. https://doi.org/10.1097/01.psy.0000127689.38525.7

Maunsell, E., Brisson, J., & Deschênes, L. (1995). Social support and survival among women with breast cancer. *Cancer*, 76(4), 631–637. https://doi.org/10.1002/1097-0142(19950815)76:43.0.CO;2-9

National Cancer Institute. (2022). SEER cancer statistics: *Female breast cancer.* https://seer.cancer.gov/statfacts/html/breast.html

Pietruch, M., & Jobson, L. (2012). Posttraumatic growth and recovery in people with first episode psychosis: An investigation into the role of self-disclosure. Psychosis, 4(3), 213–223. https://doi.org/10.1080/17522439.2011.608434

Sariego, J. (2010). Breast cancer in the young patient. *The American Surgeon*, 76(12), 1397–1400. https://doi.org/10.1177/000313481007601226

Taylor, C., Trowbridge, P., & Chilvers, C. (1991). Stress and cancer surveys: Attitudes of participants in a case-control study. *Journal of Epidemiology and Community Health*, 45(4), 317–320. https://doi.org/10.1136/jech.45.4.317

Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress,* 9(3), 455–471. https://doi.org/10.1007/bf02103658

Thomas, J. M., Jr., & Weiner, E. A. (1974). Psychological differences among groups of critically ill hospitalized patients, noncritically ill hospitalized patients, and well controls. *Journal of Consulting and Clinical Psychology*, 42(2), 274–279. https://doi.org/10.1037/h0036248

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2