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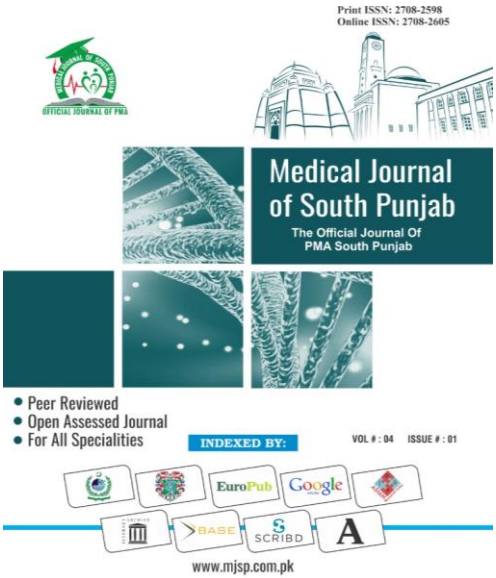

Role of coping strategies in the association between resilience and posttraumatic growth among cancer patients

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Original Article

Role of coping strategies in the association between resilience and posttraumatic growth among cancer patients

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ABSTRACT

Objectives: *The study aimed to explore the association between resilience, posttraumatic growth, and Coping Strategies among cancer patients. Moreover, the study also investigates the mediating role of coping strategies in the link between resilience and posttraumatic growth.*

Methodology: *A cross-sectional study was conducted on a sample of 150 individuals who completed questionnaires, including the brief resilience scale, posttraumatic growth inventory, and brief cope.*

Result: *The study revealed a positive relationship between resilience, Posttraumatic Growth (PTG), and coping strategies. Moreover, findings show that resilience is not predictive of higher posttraumatic growth (PTG).*

Conclusion: *Posttraumatic growth is 23% mediated by emotion-focused coping strategies and patients have a tendency to use avoidance coping strategies which leads lower healthy growth.*

Keywords: *Cancer, Resilience, Posttraumatic Growth, Coping Strategies, Bahawalpur.*

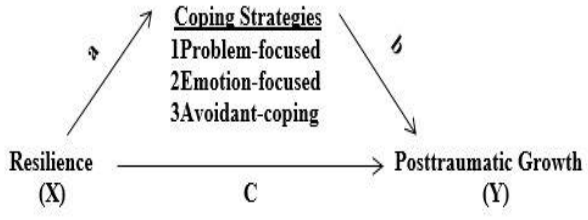
1. INTRODUCTION

Cancer is a leading cause of death in developed countries[1]; however, some patients demonstrate remarkable growth in the face of adversity.[2] The ability of an individual to withstand and bounce forward from stressors or adversity is referred to as resilience.[3] The theory about this characteristic, Sense of Coherence was developed by,[4] which states that some people are less affected by stressful environment then other by using emotional resources. The theory identified three themes that reflected a strong sense of coherence including comprehensibility, manageability and meaningfulness.[5] Posttraumatic growth is a valuable and productive experience resulting from the struggle to survive stressful events.[6] It manifests in different domains, including appreciation for life, improved relationships, personal strength, spiritual growth, and new possibilities.[7] According to the cognitive processing theory, when individuals experience stressful situations, they engage in cognitive processes to find meaning in a productive way, leading to the perception of growth. This theory also emphasizes the role of the social environment, as supporting others can help individuals find positive meaning and perceive posttraumatic growth.[5] As described in theory, coping, getting support from family, friends may help survivors with cancer patients through positive meaning.[8] Coping is an individual's efforts and struggle to manage outer and inner demands,[5] patients use Problem-focused Coping, Avoidant Coping or Emotion-focused Coping to cope with distressing impact of cancer.[9] Another study highlighted that social support, its types and sources associated with posttraumatic growth.[10]

The transactional theory of stress and coping, of Lazarus and Folkman states when an individual assess the stressor more threatening, harmful and challenging then appraisal induce emotions, as a result emotion provoke coping strategies to manage emotions and stressors that induce anxiety.[11] Primary features of the theory are Cognitive appraisal (appraisals of individual integrate two sets of forces firstly, an individual's personal agenda, secondly environmental factors) and Coping (changing cognitive and behavioral efforts to manage demand).[11] Coping strategies used by cancer patient to cope with adverse effect of trauma is affected by optimism, resilience, gender and type of cancer, existing literature shows that, subjective well-being, engagement coping and lower levels of avoidance was positively associated with optimism.[12]

The study aimed to see the relationship between Resilience, Posttraumatic Growth, and Coping Strategies among cancer patients. This study also investigates significant gap as mediating role of coping strategies in the relationship between resilience and posttraumatic growth. This research would help paramedic staff and caregivers understand how emotional support can motivate patients to recover. Keeping in view of the above literature, it is hypothesized that **H1** resilience would have positive correlation with coping strategies and posttraumatic growth. Another hypothesis **H2** Coping strategy would have mediating role between resilience and posttraumatic growth.

Model of the Study



C = the total effect of **X** (Independent Variable) on **Y** (Dependent Variable)

C = c'+ ab

c' = the direct impact of **X** on **Y** after controlling impact of mediator.

2. METHODOLOGY

The present study employed a correlational research methodology to investigate the associations between resilience, coping strategies, and posttraumatic growth. A sample of 150 participants, who met the inclusion criteria (diagnosis of cancer and undergoing therapy, i.e., chemotherapy or radiotherapy), was selected using purposive sampling. Participants without a proper cancer diagnosis, ongoing treatment, or aged less than 20 were excluded. After selecting the variables, permission was obtained from the Bahawalpur Institute of Nuclear Medicine & Oncology. Subjects complete the questionnaire about their Age, Gender, Education, Type of participant e.g. cancer patients or survivors, Type of treatment, cancer (this was optional for participants), Stage of cancer at diagnosis, Onset of problem (cancer), Marital status, and Number of children of patients to assess the social support and Socioeconomic status for knowing about problems faced by patients or their family members. A questionnaire was formed which includes informed consent, demographic measuring sheet and three measuring scales. To measure resilience, a brief resilience scale consisting on 6 items was used in the study.[13] This brief resilience scale consisted on 5 point-Likert scale which ranges from 1 to 5. Item 2, 4 and 6 has reversed scoring. The scale has good reliability. To measure Coping, a 28 items Brief COPE was used to measure coping strategies.[9] This scale has three sub-scales, Problem-Focused, Emotional-Focused and avoidance coping. The scale items were rated on 4-likert scale which ranged from 1 to 4. To measure posttraumatic growth, a 21 items Posttraumatic Growth Inventory PTGI was used.[14] The scale consists of five subscales, Personal Growth, Spiritual, Appreciation for life, Improved Relationships, and New Possibilities. The scale rated on six-point Likert scale ranged from 0 to 5. This study was a quantitative research and data was collected and analyzed quantitatively. SPSS-22 software which was also known as Statistical Package for Social Science used for further analysis. Descriptive statistic, Pearson correlation and regression analysis is used to measure and predict relation between independent and dependent variables.

3. RESULTS

Table 1 shows demographic information as well as percentage of cancer patients' onset of cancer and their stage level. Majority of the participants were female 102 while male were 48. The type of treatment majority of the cancer patients were taking Chemo therapy (n=135) and one respondent was taking radiation therapy.

The table shows about mean standard deviation and correlation about study variables. Pearson's correlation coefficients were calculated between resilience, coping strategies, resilience, and posttraumatic growth. Except avoidant coping all other scales have good alpha coefficient. As shown in Table 2, all correlations between resilience, coping strategies, resilience, and posttraumatic growth were not statistically significant high. Avoidant Coping found very low correlation, while Emotion-Focused Coping, and Posttraumatic Growth significantly associated with Resilience ($p > 0.05$) except for the correlation between Resilience and Problem-focused Coping.

The results of this table show that emotional focused coping mediated that relationship

between resilience and posttraumatic growth regression analyses were conducted and regression coefficients were calculated to explore mediating impact of Coping Strategies between Resilience and Posttraumatic growth association. After controlling mediator resilience was not associated with posttraumatic growth presented and avoidance coping (*β=-.064*) found to be non-significant with posttraumatic growth.

Table 1: Descriptive Statistics for Main Variables

(Respondents) *n*=150	**Frequency**	**Percent**
Gender		
Male	48	32
Female	102	68
Age Group		
20-39	39	26
40-59	50.7	50.7
60 and above	35	23.3
Education		
Natural Sciences	72	48
Social Sciences	78	52
Onset of Problem		
Less than 1 year	82	54.7
More than 2 years	32	21.3
More than 4 years	36	24
Stage at Diagnosis		
I-Stage	28	18.7
II-Stage	41	27.3
III-Stage	28	18.7
IV-Stage	26	17.3
No response	27	18
Type of Treatment		
Chemo Therapy	135	90
Radiation Therapy	1	.7
Survivors	14	9.3

Table-2: Summary of Pearson Correlation analysis (N=150)

Table 2: *Summary of Pearson Correlation analysis (N=150)*

Variables	Mean	Standard Deviation	α	1	2	3	4	5
Resilience	21.92	4.55	.82					
Posttraumatic Growth	70.46	13.18	.86	.196*				
Problem-focused Coping	23.25	3.27	.71	.163*	.502**			
Emotional-Focused coping	29.57	4.01	.76	.432**	.435**	.530**		
Avoidant Coping	14.12	3.58	.65	.080	.051	.042	.271**	

** Correlation is significant at 0.01 level (2-tailed)

Table 3: *Direct and indirect impact Resilience (through Emotional Focused Coping) on Posttraumatic Growth (N=150)*

Variable	Model 1	Beta	t-value	Model 2 95% CI		P
Constant[a]	20.684	17.83	3.600	*LLCI*	*ULCI*	.000
Avoidance Coping	.024	-.226	2.885	*2.960*	*32.704*	.004
Emotion-focused Coping	117	.500	6.476	*.004*	*.344*	.000
Resilience	.057	.140	1.887	-1.243	3.144	.061

(R=.565, R^2=.319, $F_{(4, 151)}$ =17.045, p<.000)

* Dependent Variable: Posttraumatic Growth

** Correlation is significant at 0.05 level (2-tailed)

4. DISCUSSION

This study aims to investigate the role of resilience in fostering posttraumatic growth and to explore coping strategies as a mediator between resilience and posttraumatic growth among cancer survivors and cancer patients. The study shows that resilience has positive association with coping strategies and posttraumatic growth, consistent with literature, resilience has positive association with emotion-focused coping and future uncertainty,[15] active coping strategies[16] and positive coping, resilience and social support positively linked with posttraumatic growth.[17] However, finding also shows that resilience found to be associated at lower level with problem-focused coping, this finding found to be consistent with previous research which has identified that resilience was significantly positively associated with problem-focused coping and total coping,[18] positively correlated with positive coping

style.[19] Coping strategies except avoidance coping, display significantly positive correlation with posttraumatic growth, consistent with literature, social support, part of emotion-coping strategies including emotional support, acceptance, self-blame, religion[9] and problem-focused coping may specifically help cancer patients in experiencing posttraumatic growth.[20.]

In addition, regression analysis shows that relationship between resilience and posttraumatic growth was mediated by emotion-focused coping strategies and patients have a tendency to use avoidance coping strategies in traumatic event which leads to lower the growth from adversity. Therefore emotional focused coping as mediator has 24% impact on posttraumatic growth as consistent with literature, coping strategies mediated with the relationship between resilience and quality of life,[21] emotional support and acceptance coping were associated with better quality of life and mood in incurable cancer patients,[22] However, avoidance coping are statistically significantly predicted posttraumatic growth and association with growth after adverse situation, denial and self-blame coping strategies venting and denial appeared as suppressors, while planning plays mediating role between resiliency and post-traumatic growth.[23] The present study has limitations that should be acknowledged. The first limitation indicates that the sample size was limited to 150 participants, which may limit the generalizability of the study findings. Secondly, the cross-sectional nature of the research implies that its finding is unable to generalize to long-term health outcomes. Furthermore, the absence of diversity in the study sample is noteworthy, as participants were recruited from a single hospital. It is suggested that future research may adopt a longitudinal study design with a sizable sample, ideally above 500 participants for better result. Moreover, to measure gender impact, it is advised that sample should be equally divided into male and female, to check the impact of gender. In addition, future research may focus to develop and implement intervention protocols.

5. CONCLUSION

Current study was conducted on cancer patients and findings shows that resilience has significance positive correlated with posttraumatic growth and coping strategies except problem-focused coping strategies. The findings suggest that coping strategies are important to boost resilience and study may help health professionals to guide and encourage cancer patients to identify their coping mechanism.

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