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## Relationship of Social Support, Coping Strategies and Personality Traits with Post Traumatic Growth in Cancer Patients

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### Abstract

The present study aimed to investigate the relationship of social support, coping strategies and personality traits with post-traumatic growth in cancer patients and the extent to which Social Support, Coping strategies and personality traits predict post-traumatic growth. Participants were 286 cancer patients selected purposively from department of Radiation Oncology, Government Medical College and Associated Hospitals, Srinagar, Noora Hospital, Zainakote Srinagar, Florence hospital, Chanapora Srinagar, and Cancer Society of Kashmir, Chanapora, Srinagar. Participants completed the sample survey packets comprised of Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988), Brief COPE (Carver, 1997), NEO-FFI (Costa, P & McCrae, R, 1992), and Post-traumatic Growth Inventory-Short Form (Cann, Calhoun, Tedeschi, Taku, Vishnevsky, Triplett, & Danhauer, 2010). Results revealed that personality traits (Neuroticism, Extraversion, Openness, Conscientiousness), Adaptive coping strategies, Social support are significantly correlated with post-traumatic growth. It was further found that Social support, Adaptive coping strategies and Personality traits (Neuroticism, Conscientiousness), significantly predict post-traumatic growth explaining 26% of the variance in the model of post-traumatic growth. These findings have been discussed in the light of available literature.

**Keywords:** Post-traumatic growth, Social Support, Coping, Personality traits, Cancer.

### INTRODUCTION

Adverse life events are inevitable part of life's journey. Traumatic life events such as accidents, illnesses, bereavement, assaults can be encountered without any prior warning. Cancer diagnosis can be considered as potentially disrupting the life of an individual in many ways, as the core assumptions of the world and self are challenged. Due to diagnosis the frightening issue of death and dying is brought up. Cancer being a life threatening illness can be considered a traumatic experience with many consequences for subsequent life. Diagnosis of cancer can have profound impact on patient's psychological functioning (Kornblith et.al. 2003). Anxiety and depression are common reactions to cancer diagnosis (Cordova et. al. 1995). Despite the dread and discomfort accompanied with cancer diagnosis, growing body of literature

suggests that stressful events may not only lead to psychosocial problems, but may also be a catalyst for positive changes (Joseph & Linley, 2004). It has been reported that majority of cancer patients experience these positive changes because of their illness (Sears, Stanton & Danoff-Burg, 2003). Tedeschi and Calhoun (1995, 2004) used the term *post-traumatic growth* to describe the positive changes experienced as a result of struggle with highly challenging life circumstance. There is an evidence that a variety of cancer patients have reported PTG from their cancer experience including prostate cancer (Thornton & Perez, 2006), breast cancer (Antoni et al., 2001), testicular cancer (Rieker, Edbril, & Garnick, 1985), colorectal cancer (Salsman, Segerstrom, Brechting, Carlson, & Andrykowski, 2008), cancers requiring a bone marrow transplant (Tallman, Altmaier, & Garcia, 2007) leukemia and lymphoma (Daiter, Larson, Weddington, & Ultmann, 1988), and mixed cancers (Schulz & Mohamed, 2004). The percentage of patients who experience positive changes after being diagnosed with cancer is estimated at 30-90% (Tedeschi, Park & Calhoun, 1998; Mystakidou et al., 2008).

A number of factors are posited to be important in the development of post-traumatic growth. Post-traumatic growth is an outcome of a number of factors, including the intensity of the experienced event; the magnitude of health and life risk, time elapsed from exposure to this risk, ways of coping with the life experience, and individual characteristics irrespective of the nature of traumatic event (Ogińska-Bulik, 2013). Social support also determines post-traumatic growth. Social support helps an individual in expressing negative emotions, enhancing feelings of closeness, preserving relationships, improving psychological well-being and most importantly it promotes the choice of efficient coping strategies. The main role of social support is to help the afflicted persons to mobilize all the resources in order to cope with their condition more efficiently. Repeatedly social support has been linked with psychological adjustment and health (Bonanno, Galea, Bucciarelli & Vlahov 2007; Galea et. al. 2002). Within the literature of post-traumatic growth, social support is considered as a key environmental resource (Shaefer & Moos, 1992; Tedeschi & Calhoun, 1996). But little is known about the role of social support in the experience of post-traumatic growth as the evidence is mixed, some studies have highlighted positive correlation between social support and post-traumatic growth whereas others have reported the negative correlation between the study constructs (Cordova, Cunningham, Carloson, Andrykovsky 2001; Schwarzer, Luszczynska, Bohemer, Taubert & Knoll 2006). Possibility of sharing emotions with others is a key factor in the process of coping with trauma (Harvey, Barnett & Overstreet 2004). Availability of the support network, including the formal groups, is therefore vitally important. During coping with a disease, a particular role is ascribed to support from close relatives, mostly family members. Posttraumatic growth is promoted by support from friends and significant other; however, support from family members proves to be the strongest reinforcement (Tanriverd, Savas & Can 2012).

Coping has also been suggested as one of the important determinants of post-traumatic growth. It is acknowledged that using adequate and adaptive coping strategies produces growth (Armeli, Gunthert, & Cohen, 2001). Coping strategies play an important role in posttraumatic growth. In many cancer situations, it has been demonstrated that adaptive coping such as religious coping, acceptance or positive reinterpretation are positively correlated with posttraumatic growth (Lechner et al., 2006; Urcuyo et al., 2005) whereas non adaptive coping such as substance use or self-blame is not associated with growth (Bellizzi & Blank, 2006; Karanci & Erkam, 2007). A meta-analysis confirms these results and also underlines the positive association between denial coping and posttraumatic growth (Helgeson, Reynolds, & Tomich, 2006). Cognitive coping processes play an important role in the development of perceived positive changes (Tedeschi & Calhoun, 2004). There is enough empirical evidence indicating that cognitive and behavioral coping strategies play a role in psychological changes due to stressful events. Positive changes have been found to be strongly associated to coping by positive reappraisal and acceptance (Helgeson, Reynolds & Tomich 2006). More use of approach coping (i.e. acceptance, positive reappraisal, and problem-focused coping) related to more positive change (Linley & Joseph, 2004). Approach coping has also been related to positive changes in cancer patients (Park, Edmondson, Fenster, Blank, 2008). There have been mixed results regarding avoidant coping strategies. No significant association has been found between avoidant coping (e.g. denial and behavioral disengagement) with positive changes (Park et. al. 2008).

Personality is also one of the variables that has been studied in relation to post-traumatic growth. Personality traits are important factors because they determine how an individual will adapt to stressful events

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and how they will recover from these events (Watson and Hubbard, 1996). In the literature, researchers have found a link between PTG and some personality traits such as Affective personality (Norlander, Von Schedvin, & Archer, 2005), dispositional hope (Yola, 2011), hardiness (Waysman, Schwarzwald, & Solomon, 2001), sense of coherence (Znoj, 1999), and Big Five Dimensions of personality (Tedeschi & Calhoun, 1996). Research focusing on personality as a pre-trauma variable has shown that openness to experience (Linley & Joseph, 2004; Tedeschi & Calhoun, 1996), agreeableness and conscientiousness (Garnefski, Kraaij, Schroevers, & Somsen, 2008; Linley & Joseph, 2004), extraversion (Garnefski et al., 2008; Sheikh, 2004; Tedeschi & Calhoun, 1996), and neuroticism (Evers et al., 2001; Garnefski et al., 2008) are correlated with PTG. Tedeschi and Calhoun (1996) showed that the personality traits of extraversion, openness to experience and optimism are specifically positively related with the dimensions of new possibilities and personal strength. However, there are also some studies failing to find a relationship between personality and PTG, like for optimism (Bostock, Sheikh, & Barton, 2009). In general there is some support for the role of certain personality traits in the development of post-traumatic growth. The purpose of the present study was to find out the relationship of social support, coping strategies and personality traits with post-traumatic growth and to investigate the extent to which social support, coping strategies and personality traits predict post-traumatic growth.

## **METHOD:**

### **Participants:**

The study was based on a sample of 286 cancer patients selected from the department of Radiation Oncology, Government Medical College and associated hospitals, Karan Nagar, Srinagar, Noora Hospital, Zainakote, Srinagar, Florence Hospital, Chanapora Srinagar, Cancer Society of Kashmir, Lal Nagar Chanapora Srinagar. To be eligible for the study participation the patients also had to a) be greater than 18 years of age b) have a definite diagnosis of cancer c) provide informed consent d) at least six months since the diagnosis of the disease.

### **Procedure:**

After explaining the aims and procedure to the heads of the clinics, the consent was obtained to conduct the study. Patients who fulfilled the criteria were approached by the researcher. Some of the patients were under treatment whereas others attended the clinic for the follow-up appointment. Patients were informed about the aims and procedure of the study. Participation was on the voluntary basis and after obtaining the consent the scales were applied on the participants by the researcher.

### **Instruments:**

All participants completed the sample survey packets comprising of following measures:

**Post-Traumatic Growth Inventory-SF (Cann, A., R. G. Tedeschi & L.G. Calhoun, 2010)** comprises of 10 items rated on a 6-point scale (from 0 to 5). Total score ranges from 0-50. Internal consistency has been reported 0.90 and test-retest reliability 0.71. For present study the cronbach alpha was 0.71.

**Multi-Dimensional Scale of Perceived Social Support Assessment (Zimet, G. D., Dahlem, N. W., Zimet, S. G. & Farley, G. K., 1988)** consists of 12 items rated on a 7-point scale. Possible range of scores is 7-84. These 12 items assess social support from three sources, family, friends and significant other. Coefficient alpha for the sub-scales and the scale as a whole ranged from 0.85 to 0.95. Test-retest values ranged from 0.72 to 0.85. For the present study cronbach alpha for the whole scale was 0.80 and for the sub-scales cronbach alpha was, Support from Family 0.72, Support from friends 0.89 and Support from significant other 0.91.

**Brief COPE Inventory (Carver, C. S, 1997)** consists of 28 items rated on a 4-point Likert scale. The items are divided into fourteen sub-scales. For COPE the authors report internal consistency reliability of 0.92 and test-retest reliability of 0.89. Due to cultural issues and due to the absence of variance in current study, one original sub-scale of substance abuse was discarded. A score of adaptive

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coping was computed by adding 11 original sub-scales of Active coping, planning, positive reinterpretation, humour, religion, seeking emotional support, seeking instrumental support, self-distraction, venting, positive reframing, and score of passive coping was computed by adding the sub-scales of self-blame, denial, behavioural disengagement (Danhauser, et. al.2013). Cronbach alpha for scale as a whole was 0.62, and for active-adaptive coping it was 0.74, while for passive coping it was 0.69, for this sample.

**NEO Five-Factor Inventory (NEO-FFI) (Costa, P & McCrae, R, 1992)**, the 60 items of the NEO-FFI are rated on a five point scale. The NEO-FFI Scales show correlations of .75 to .89. For the NEO-FFI, the internal consistencies reported were N= .79, E=.79, O=.80, A=.75, C= .83. For the present study the cronbach alpha reported is N= .82, E= .73, O= .64, A= .72, C= .69.

A baseline characteristic questionnaire was also included requesting information regarding patient's age, gender, monthly income, residential status, family status, employment status, time since diagnosis, and stage of the disease.

### Results:

Analysis was performed using the SPSS.20. To assess relationship between study variables bivariate correlation was used and to find out the extent to which social support, coping strategies and personality traits predict post-traumatic growth multiple regression analysis was used. Descriptive statistics i.e. mean, standard deviation and range were calculated for the sample with respect to the study variables.

**Table 1: Descriptive Statistics for Study Variables**

Study Variables	M	SD	Range
Support from Family	24.38	2.72	16-28
Support from Friends	16.59	4.62	4-28
Support from Significant Other	24.23	4.19	4-28
Total Social Support	65.34	7.73	38-84
Active-adaptive Coping	62.07	6.15	40-78
Passive Coping	9.69	2.98	6-19
Neuroticism	18.99	8.70	0-41
Extraversion	34.34	6.72	13-48
Openness	28.90	4.68	18-46
Agreeableness	38.76	5.67	21-48
Conscientiousness	33.66	5.27	21-46
Post-Traumatic Growth	36.47	5.52	17-49

**Table 2: Correlations between Social Support, Coping Strategies, Personality Traits and PTG**

	Post-traumatic Growth
Support from Family	.22**
Support from Friends	.19**
Support from Significant Other	.27**
Total Social Support	.32**
Active-Adaptive Coping	.35**
Passive Coping	-.05 <sup>NS</sup>
Neuroticism	-.28**
Extraversion	.17*
Openness	.23**
Agreeableness	.07 <sup>NS</sup>
Conscientiousness	.40**

**\*\*p<0.01, <sup>NS</sup> Insignificant**

Pearson's Correlational coefficients were calculated to examine the relationship between the variables of the study. The correlational analysis showed that PTG is significantly associated with Support from family ( $r=0.22$ ,  $p<0.001$ ), Support from friends ( $r=0.19$ ,  $p<0.01$ ), Support from Significant other ( $r=0.27$ ,  $p<0.001$ ), Total support ( $r=0.32$ ,  $p<0.001$ ), Active-adaptive Coping ( $r=0.35$ ,  $p<0.001$ ), Neuroticism ( $r= -0.28$ ,  $p<0.001$ ), Extraversion ( $r=0.17$ ,  $p<0.01$ ), Openness ( $r=0.23$ ,  $p<0.001$ ) and Conscientiousness ( $r=0.40$ ,  $p<0.001$ ). However the correlation of Agreeableness ( $r=0.07$ ,  $p=0.90$ ) and Passive coping ( $r= -0.05$ ,  $p=.39$ ) with post-traumatic growth was found to be insignificant.

**Table 3: Summary of the final model of regression analysis of the Social Support, Coping Strategies and Personality Traits on PTG**

Outcome	Predictors	B	SE B	B	t	Pr
Post-traumatic Growth	Constant	17.40	5.82	-	2.98**	-
	Social Support	.10	.04	.14	2.42*	.14
	Active-adaptive Coping	.16	.05	.18	2.96**	.17
	Neuroticism	-0.11	.05	.17	2.17*	-.12
	Conscientiousness	.36	.08	.34	4.52**	.26

Note:  $R^2=0.26$ , \*\* $p<0.001$ , \* $p<0.05$

Multiple regression analysis was done to investigate the degree to which PTG could be explained by social support, coping strategies and personality traits in the model of post-traumatic growth. The results revealed that Social Support ( $\beta = .14$ ,  $p < .05$ ) and Adaptive Coping Strategies ( $\beta = .16$ ,  $p < .001$ ), Personality traits viz. Neuroticism ( $\beta = -.11$ ,  $p < .05$ ) and Conscientiousness ( $\beta = .34$ ,  $p < .001$ ) could predict 26% of the variance ( $R^2 = .26$ ;  $F(8, 285) = 12.17$ ,  $p < .001$ ) in the Model of Post-Traumatic Growth in Cancer Patients (See table 3).

## DISCUSSION:

The primary goal of this study was to investigate the relationship of social support, coping strategies and personality traits with post-traumatic growth. Further the study aimed to find out whether social support (from different sources), coping strategies and personality traits predict post-traumatic growth in cancer patients. The results revealed that social support (from family, friends, significant other as well as total support) is significantly and positively related to post-traumatic growth. This finding is consistent with the study conducted by Tanriverd, Savas, & Can (2012) who while investigating the role of perceived social support in cancer patients found that total perceived social support, support from family, and friends were significantly and positively associated with the development of PTG. Availability of social support networks in the aftermath of trauma can influence post-traumatic growth (Joseph & Linley, 2005; Tedeschi & Calhoun, 2004). This may be particularly relevant in Asian collectivistic cultures where mutual support among family members and kinship is emphasized at all times. According to posttraumatic Growth theory also individuals who are able to share experiences with others and seek tangible support may be more likely to experience PTG (Calhoun & Tedeschi, 2006).

Active-adaptive coping was also found to be significantly and positively related to post-traumatic growth. Positive reinterpretation of stressful events has adaptive role in the experience of post-traumatic growth (Taylor, 1983). Tedeschi and Calhoun (1995, 2004) have postulated that positive coping is necessary for the development of post-traumatic growth. A study by Ho, Chan & Ho (2004) supported this finding in which it was found that positive coping was the most important determinant of post-traumatic growth when compared with negative coping and psychological symptoms. Thus, if people instead of taking passive attitude, engage in stressful events, their probability of experiencing post-traumatic growth increases.



This study further revealed that personality traits viz. Neuroticism, Extraversion, Openness and Conscientiousness are significantly related to post-traumatic growth. This finding is in line with the meta-analytical study conducted by Neacșu & Popescu (2013) where personality traits extraversion, openness to experience, conscientiousness were found to be positively correlated with post-traumatic growth and neuroticism was found to be negatively correlated with post-traumatic growth.

Multiple regression analysis revealed that social support, active-adaptive coping, personality traits (Neuroticism & Conscientiousness) significantly predict post-traumatic growth explaining 26% of the variance in the model of post-traumatic growth. This result confirmed the findings of Danheer, Case and Tedeschi (2013), Galea (2014), Garnefski et. al.(2008) and Lofti-Kashnai, Vaziri, Akbari, Kazemi-Zanjani & Shamkoeyan (2014).

### **LIMITATIONS AND IMPLICATIONS:**

This study has some limitations that should be acknowledged. Care should be taken in generalizing the results as the sample utilized in this study is not a probability sample and there may be the representativeness issues. Since cross-sectional study does not infer causality so there may be the confounding of predictor and outcome variables. There is a need to conduct the longitudinal studies to overcome this limitation. This study is based only on a sample of cancer patients. Given the different nature of traumatic events, the factors and determinants of post-traumatic growth may vary in other samples.

In addition to contributing to the existing literature on post-traumatic growth, this study has implications for clinical practice and intervention. This study may help the cancer patients to nurture their abilities so that they can make positive sense of their traumatic experiences. Having knowledge of the determinants of post-traumatic growth may help clinicians and psychologists with specific intervention programs targeted at developing and enhancing post-traumatic growth. The findings of this study can be potentially uplifting for both clinicians as well as patients by providing hope that trauma can be overcome and transformed.

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### **CONFLICT OF INTEREST:**

There is no conflict of interest for any of the authors in the present study.

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