

## Summary

# Posttraumatic Growth and Attributional Style in Parents of Children with Cancer Illness

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Cancer is one of the illnesses that increases day by day and the rate of childhood cancer is increasing rapidly. Diagnosis and treatment of cancer causes psychological distress and it is a traumatic experiences for both patients and their families (Bruce. 2006). Although, traumatic life experiences lead to many psychological distresses in the relatives of people exposed to cancer diagnosis, they do not cause only adverse effects. Parents of children with cancer diagnosis experience positive changes such as posttraumatic growth (PTG) as well as the psychological distress (Barakat. 1997; Bruce. 2006; Norberg. Pöder ve Essen. 2011). The term of posttraumatic growth refers to positive psychological processes experienced as a result of the struggle with highly difficult life experiences (Calhoun & Tedeschi. 1999. 2001). Post-traumatic growth has been defined as a psychological process in which people who had experienced trauma apply positive processing and find meaning for traumatic event. This process leads to positive changes at three domains; positive changes in relationships with others, self perception and philosophy of life (Calhoun & Tedeschi. 1999).

In this study, Tedeschi and Calhoun's (1995) functional descriptive model as a PTG model was used. According to this model, individuals develop general sets of beliefs and assumptions about the world, which help to understand the causes and reasons for what happens, and that can provide them meaning and purpose about the world. Major life crises can make important challenges to the person's understanding of the world. Individual's struggle with the new reality after the traumatic event which is crucial in determining the extent to which post-traumatic growth occurs (Tedeschi & Calhoun. 1995). According to this model, personal characteristics, social resources and coping styles play important role on post-traumatic growth (Tedeschi & Calhoun. 1995).

Cognitive factors also play an important role on PTG. An attributional style is the main cognitive factor which has been studied in some researches with PTG

(Park & Helgeson. 2006; Ho et al.. 2008). Attributional style reflects the way that people habitually explain the disparity between bad or good events (Peterson& Buchanan & Seligman.1995). According to this model, people who tend to explain bad events as stable, internal and global are more depressive than people who tend to make unstable, external and specific explanations for bad events (Peterson et al..1995). Ho et al. (2008) examined the relationship between attributional style and PTG in Chinese breast cancer patients. They found that patients who tend to explain good events as stable, internal and global (optimistic explanation style) had experienced more PTG than patients who tend to make unstable, external and specific explanations for good events.

The first aim of the current study is to determine the PTG level of the parents whose children have cancer diagnosis based on functional-descriptive model of Tedeschi and Calhoun (1995). The second aim is to examine the predictive power of attributional styles, sociodemographic (gender of parents, parents' working status, and age of child) and illness related (side effects) variables to the level of PTG. Current study also tests the hypothesis of whether attributional styles will predict the level of PTG after controlling sociodemographic and illness related variables.

## Method

### Participants

Data were collected from a total of 112 parents of whom 78 were mothers and 34 were fathers having a child with cancer diagnosis at least 6 months ago ( $M = 20.79$ .  $SD = 3.13$ ). Survivors of childhood cancer were diagnosed with leukemia (%54.5) and the other childhood cancer types. The children's ages ranged between 0 to 18 ( $M = 9.32$ .  $SD = 4.76$ ) and the parents' (participants) ages ranged between 27 to 52 ( $M = 37.86$ .  $SD = 5.89$ ).

### Measures

Socio-demographic and Illness Related Information Form, Attribution Style Questionnaire, and Post-traumatic Growth Inventory were administered to the parents.

**Socio-demographic and Illness Related Information Form.** The 20- item form was prepared by researchers to tap information on sociodemographic characteristics of both parents and child and also illness related variables of child. The sociodemographic part included: age, gender, education level of both parents and children. The medical history and illness related information part included: types of cancer, the duration of illness, stages of illness, presence of side effects, types of treatment, complications etc.

**Attribution Style Questionnaire (ASQ).** ASQ was developed by Peterson et al. (1982, 1984). It includes 12 different hypothetical events. Half of these events are good events, while half are bad. Participants were asked to imagine that the twelve incidents have come to their heads, write down what is causing each and what causes them. Dimensions of ASQ are internal-external, stable-unstable, global-specific and important-insignificant dimensions. Ratings of ASQ are on a 7-point scale. Although, higher scores indicate internality, stability, globality and importance, lower scores indicate externality, instability, specificity and insignificance of the event. A composite attributional style for good events may be formed by averaging for three dimensions (internal-external, stable-unstable, global-specific) for good events. Similarly, a composite attributional style for bad events may be formed by averaging for three dimensions for bad events. Psychometric properties of the ASQ in Turkish samples were evaluated by Papatya (1987).

**Posttraumatic Growth Inventory (PTGI).** PTGI was developed by Tedeschi and Calhoun (1996). The scale has 21 items which can be grouped into five subscales, which are 'new possibilities', 'relating to others', 'personal strengths', 'spiritual change' and 'appreciation of life'. Ratings of PTGI are on a 6-point scale (0 = I did not experience this change as a result of my crisis to 5 = I experienced this change to a very great degree). The psychometric properties of PTGI were assessed by Dirik and Karanci (2008). Turkish form of PTGI has three subscales, which are 'changes in relationship with other', 'changes in self-perception', and 'changes in philosophy of life'.

### Statistical Analyses

In order to examine the relationship between socio-demographic variables and PTG independent samples t-test and one way- ANOVA were performed and to identify variables related with PTG. correlation and regression analysis were conducted.

### Procedure

Data were collected from Uludag University Hospital / Childhood Hematology and Oncology Clinics and Polyclinics. All measurements were self-report questionnaires. Written informed consent was taken from all parents.

### Results

A total mean PTG score was obtained simply by summing up the responses to the items of PTGI. The results revealed that parents had experienced moderate to high levels of posttraumatic growth ( $M = 72.34$ ,  $SD = 22.98$ ,  $Min. = 0$ ,  $Max. = 105$ ). The mean and standard deviations of subscale of posttraumatic growth were; 'for changes in self perception' ( $M = 33.96$ ,  $SD = 10.58$ ,  $Min. = 0$ ,  $Max. = 45$ ), 'for changes in relationship with others' ( $M = 23.80$ ,  $SD = 8.40$ ,  $Min. = 0$ ,  $Max. = 35$ ) and 'for changes in philosophy of life' ( $M = 14.58$ ,  $SD = 6.28$ ,  $Min. = 0$ ,  $Max. = 25$ ). In addition, mothers ( $M = 77.06$ ,  $S = 17.62$ ) experienced higher levels of PTG than the fathers ( $M = 61.30$ ,  $S = 29.47$ ) [ $t(111) = 3.47$ ,  $p < .001$ ]. Working status was also related with PTG. Working parents ( $Ort. = 77.43$ ,  $S = 16.83$ ) showed higher levels of PTG rather than non-working parents ( $Ort. = 60.86$ ,  $S = 28.72$ ) [ $F(2,109) = 6.30$ ,  $p < .05$ ].

### Predictors of PTG and Subscales

In order to examine the variables that are related to PTG four separate multiple regression analyses were conducted: 1. For Total score of PTG. 2. For 'changes in self perception' subscale of PTG. 3. For 'changes in relationship with others' subscale of PTG. 4. For 'changes in philosophy of life' subscale of PTG. In all of these analyses, the same set of variables was used as predictor variables. Independent variables were entered in two blocks. In the first block parental gender (1= mother, 2= father), parents' work status, child's age and presence of side effects of illness were entered. In the second block composite positive scores (internality, stability, and globality for good events) of attribution styles, composite negative scores (internality, stability, and globality for bad events) of attribution styles, importance for good events and bad events sub dimensions of attribution styles were entered.

The results of regression analysis for total score of PTG revealed that gender of parents (1= mother, 2= father) and importance for good events sub dimension of attribution styles were negatively and significantly related to PTG. On the other hand, child age, importance for bad events sub dimension of attribution styles and composite positive sub dimensions (internality, stability, and globality for good events) were positively correlated with PTG.

The results of second regression analysis revealed that age of the children was positively and significantly related with changes in 'relationship with others' subscale of PTG.

The results of third regression analysis revealed that gender of parents was negatively and significantly related with 'changes in self perception' dimension of PTG. On the other hand, children's age and importance for bad events subscale of attribution styles were positively and significantly related with 'changes in self perception' subscale of PTG.

The results of fourth regression analysis revealed that parents' gender was negatively and significantly related with 'changes in philosophy of life' subscale of PTG. On the other hand, ages of children positively and significantly related with 'changes in philosophy of life' dimension of PTG.

### Discussion

Diagnosis and treatment of cancer have psychological difficulties for both patients and their families. Parents of children with cancer diagnosis experience positive changes such as Posttraumatic growth (PTG) as well as psychological distress. The aim of the present study is to determine the level of PTG and to examine the relationship among PTG levels of parents with sociodemographic variables, illness related variables and attribution styles. According to the results of analyses parents had experienced moderate to high levels of PTG and also mothers had experienced higher levels of PTG than the fathers. The results revealed that the sub dimensions of attributional style which are importance for good events, importance for bad events, a positive composite scores (internalization, generalization, and stability for good events), from sociodemographic variables child's age and parental gender were found as significant predictors of PTG and subscales.

Results demonstrated that parenting a child with cancer diagnosis may lead to PTG, and this concept is related with these families. In this study total posttraumatic growth score was calculated from Posttraumatic Growth Inventory and the mean score was 72.34. In literature parents of autistic children (64 for mothers, 57 for fathers) and bereaved parents (64) had lower PTG level. Our PTG findings higher than these samples. It may be that having children with cancer is more traumatic than other illness but improvement from cancer leads more PTG.

In this study, the predictive power of attribution styles which is one of the cognitive factors of PTG was investigated. According to the results of analysis, it was found that when the attribution of importance for good

event increased, total PTG level were decreased and attribution of importance for bad events and combined positive scores were increased, total PTG level were increased too. Attribution styles in terms of PTG subscales pointed that increase in importance for bad events was associated with increase in changes in self perception. These findings are consistent with the small number of studies that research for the relation of attributional styles and PTG (Ho et al., 2008; Ho et al., 2011). In these studies, it was thought that people experience high level of PTG by applying optimistic explanation for good events so that they have a good utilization of their personal and environmental resources. However, in both studies in the literature, no correlation was found between attribution styles for bad events and PTG. On the contrary, it was found that increase in importance for bad events and combined positive scores were related with increase in PTG. This finding might be explained by the fact that when people accept bad event as important one, they could think more about it and therefore, it could lead to experience high level of PTG.

Sociodemographic variables were also examined as a predictor of posttraumatic growth of parents with cancer diagnosis child. As a result of regression analysis, it was found that ages of children and parent's gender were predictors of PTG. Child's age was positively and significantly associated with three subscales of PTG and total PTG scores. In other words, when child's age increases, the level of parents' PTG increase. Whereas some studies reported the same finding (Barakat et al., 2006; Micheal et al., 2009), in some studies for instance it was found that in parents of a bereaved child there was no significant correlation between death age of child and level of PTG (Engelkemeyer & Marwit, 2008). In the current study, it was determined that as children aged increases, parents had higher level of PTG. Possible explanation for this finding is that when the age of child increases, the time they spend with their child will increase and have more memories hence parents will have more resources for PTG so that having a cancer diagnosis child at a later age could be a contributing factor for PTG.

It was also found that another sociodemographic variable which is parental gender (being mother or father) was a significant predictor of total PTG scores and two subscales of PTG in this study. In other words, mothers indicated more improvement on total PTG scores, subscales of "changes in self-perception" and "changes in philosophy of life" than fathers however in terms of "changes in relationships with others" there was no significant differences between mothers and fathers. When the related literature was examined, most of the studies asserted that also mothers had a higher post traumatic

growth than fathers (Elçi. 2004; Dirik & Karancı. 2008; Kesimci et al.. 2005; Linley & Joseph. 2004; Tedeschi & Calhoun. 1996).

Another sociodemographic variables which was examined as a predictor of PTG was parents' work status in the current study. According to one-way ANOVA results, it was demonstrated that for those who did not work had a higher level of PTG. It might be said that mothers and unemployed parents have higher level of PTG since mothers exposed more physical and psychological traumatic events than fathers and also parents who did not work have more physical and psychological exposure to more traumatic events than working parents.

Although the findings of the present study contribute to the existing literature, the study has several limitations. The limitations of the study were; using self report scales, collecting data only in a specific hospital, and participants are volunteers and many of participants are mothers of children. Finally, as a clinical conclusion, the data suggest that in psychotherapeutic process of families, take action on cognitive process will be important for getting higher posttraumatic growth.