

Predicting Post Traumatic Growth Based upon Self-Efficacy and Perceived Social Support in Cancer Patients

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Abstract

Background: Despite the fact that being exposed to traumatic and stressful events could have severe consequences, studies have shown that even in the wake of negative events such as cancer diagnosis, we see some changes and positive impacts in scheme, philosophy of life and self-perception, a process which is called Post Traumatic Growth (PTG). The aim of the current research is to define share of self-efficacy and perceived social support in the prediction of PTG.

Methods: The research is a correlation type. For this aim, 95 patients with cancer came to Shohadaye Tajrish Hospital, Tehran, Vali-e-Asr Hospital, Zanjan, and Mehraneh Charity Institute, Zanjan in 2012 have been selected based on available sampling and evaluated regarding self-efficacy, and perceived social support and PTG.

Results: Data analysis using Pearson correlation and regression analysis (simple and multiple) showed that self-efficacy and Perceived Social Support in cancer patients have direct significant relation with variable of PTG and explain 13.5%, 10.6% and jointly 20.7% of PTG changes respectively.

Conclusion: The research findings show that the variables of self-efficacy and Perceived Social Support explain significantly the PTG and these psychological variables can be used to provide improvement plans and mental health and PTG facilities.

Keywords: Post traumatic growth; Perceived Social Support; self-efficacy; cancer

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Introduction

Gastric cancer is one of the most common Traumatic events could happen in lives of many people [1] and post traumatic distress and suffering happen immediately afterwards [2], but we should take into account that Post Traumatic Growth (PTG) could happen in many of such events although these growths could be time consuming and take several years. Zoellner and Maercker defined the PTG as a set of positive changes against disastrous events of people's life during post trauma period which cause optimal adaptation in a person [3]. In the traumatic literature, the growth can be classified in 5 groups as below: self-perceived changes, changes in

relationships with others, increased spirituality or change in philosophy of life, a higher consciousness of the previous life and a higher apperception of the life [4, 5]. Changes in philosophy of life can appear as a new interpretation and positive overlook to the life. People, who have experienced this type of change, claim a better and more enjoyable understanding of their daily lives [6]. Tedeschi and Calhoun in 1996 have presented an empirical model about post traumatic growth. According to this model, the negative life events such as having chronic diseases in some people can lead to positive results [7]. Joseph and Linley (2006) believe that despite our previous interpretation of trauma as a means of damage to the body, mentality and

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interpersonal relationships, the effects and signs of PTG can lead people toward benefit finding, flourishing, heightened existential awareness, perceived benefits, antagonism growth, quantum change, self-renewal, stress related growth, and transformational coping and progressing [8].

The three theoretical approaches of functional-descriptive model, meta-theoretical person-centered perspective and bio psychosocial-evolutionary view are the main research basis about PTG. The functional-descriptive model has been presented by Tedeschi in 1999 and was reviewed in 2004 [9], the main emphasis is based on evaluation process. In this approach, the traumatic events act as challenges on schemes before trauma, break previous goals and break ways of giving methods to create intense emotions and initially cause mental disturbance of a person and then, in response to these conditions, some mechanisms are created such as rumination to prevent continuity of the current situation. Tedeschi consider the rumination as behavioral activity (mainly cognitive) which causes recreation of post traumatic schemata and helps the traumatic person to find out what happened and how should react emotionally against the trauma [5]. The trans-theoretical patient oriented approach which has been basically introduced by Joseph (2003) believes that human is an oriented creature toward attempt and growth and being naturally affected by environmental and social conditions toward externalizing cognitive psychological experiments [10]. The approach of meta-theoretical person-centered perspective is mainly related to Christopher (2004) which considers the growth as the most common result followed by being exposed to an environmental trauma. Before considering growth as a pathological case, he believes it is more of a natural result against a response to a traumatic event [11].

Considering the aforesaid approaches about PTG, the theoretical background of PTG as an illusion has engaged the traumatism scientists' minds. Taylor and Albert (1996), who are the leading theorists regarding illusionary effects of the traumas, believe in their side matching theory that people need to keep their internal stability and integrity against critical experiences and sudden changes of life. When a person faces a critical situation he/she finds a difference between current and previous identity; this causes to make a falsification about previous identity in order to reduce the tension followed by the current situation

[12]. The study of Widows et al. (2005) about people's documents before and after bone marrow transplantation in cancer patients supports Albert's theory [13]. The research findings about post trauma growth show that such growth is rare among children or basically it does not exist [9, 14]. This growth increases by age [4] and it is different between men and women [13, 15].

Some personality features or psychological interventions could be considered as effective factors on PTG which generate coping skills and adaptability against stressful issues, for instance, ability to build self-regulation or self-control or in other words having self-efficacy. The self-efficacy is a key variable in Social Cognitive Theory of Bandura [16, 17] which is defined as people's judgments and beliefs about their abilities to mobilize motivation, cognitive resources, control on a defined event and the way of confrontation with obstacles and challenges. It empowered people to adopt health promoting behaviors and leave harmful attitudes [18, 19]. It has an important role in psychological adjustment, resolving mental disorders, physical health, strategies of self-guided behavior change and consultation [20]. Self-efficacy is one of the most important components of success and compromising. It is placed among positive psychology scope [21]. Different studies confirmed its important role in adaptive confrontation styles in different situations [22-25]. During confrontation with unfavorable and stressful events, people who have high levels of self-efficacy could have control on their own thoughts and show more stability. They also will not accept negative thoughts about themselves [26].

The perceived social support can be another effective factor in PTG. Sarason considers social support as a multi-dimensional concept [25] which causes positive self-imagination, self-acceptance, hope, love and satisfaction which reduces stress and generally gives a person an opportunity to self-actualize and grow [27]. It brings a sense of being loved, cared and valued and the person considers him/herself as a social network member with helps and commits [28]. Social support is known to be one of the strongest drives for successful and easy confrontation in times which people fight with cancer and stressful conditions; it facilitates the tolerance of problems for the patients [29, 30]. It plays a mediating role among stressful factors of life, physical and mental health problems and by enhancing cognition of individuals, it causes

experienced stress reduction, improving physical and mental health and also individuals' quality of life [31-33]. It also helps mental stresses and schema correction management, reduces probability of being ill, speeds up improvement, reduces death bed and increases mental health [34], It is associated with immune response and public health [35, 36] and acts as a moderator of the grief experience [37]. Zhang and Verhoef (2002) also showed that family support for the patient is the most powerful and stable anticipator to obey the medical treatment instructions [38] and high amount of social support is in parallel with self-management improvement in chronic diseases [39].

Considering above, the aim of this research is to survey self-efficacy and perceived social support in post-traumatic growth.

Materials and Methods

This research is a fundamental research and considering the study method is a quantitative, non-experimental and correlative research. The statistical population of this research includes all women and men with cancer in Tehran and Zanjan cities in 2012. Among this population, 95 patients with cancer ranging from 14 to 72 years of age have been selected from the hospitals of Shohadaye Tajrish in Tehran and Vali-e-Aer and Mehraneh Charity Institute in Zanjan as available sample. The criteria for including individuals in the research were passing 6 to 7 months from the cancer diagnosis, not reaching to level IV of the disease, and having treatment experiences such as surgery, chemotherapy and radiotherapy.

In this research, 3 questionnaires including Post Traumatic Growth Inventory (PTGI), General Self-Efficacy Scale (GSE), Multidimensional Scale of Perceived Social Support (MSPSS) have been used.

The PTGI questionnaire is made by Tedeschi and Calhoun (1996) and includes 21 expressions in Likert's scale with domain of 0 (Never, this change is not cause by my crisis) to 5 (A lot, I consider this change as consequence of the crisis strongly) which is normally being used to measure positive results of experiencing a negative event in the life. This

questionnaire includes 5 sub-scales of new methods, change in relationships with others, personal power, value of life and spiritual change [7]. Tedeschi and Calhoun reported that PTGI has significant validity with scale of internal consistency of 0.9 and internal consistency with scales from 0.67 to 0.85. The total re-test reliability of the scale is 0.71. Also, there are some evidences to prove the validity. The validity of this questionnaire in the current research using standardized Cronbach's Alpha was calculated as 0.885 which shows high internal consistency of the elements together.

The general self-efficacy questionnaire of Schwartz has been built for the first time in 1981 by Schwartz in 10 items and the latest revision on this scale was made in 1993 and in 1996, it has been used in Iran with validity of 0.8. Also, the validity of this scale has been calculated as 0.86 using measurement method of Cronbach's alpha and 0.81 using splitting method of Spearman-Brown and Gutmann [40]. The validity of current research is calculated as 0.84 using Cronbach's alpha method.

The multi-dimensional perceived social support questionnaire is derived from social support multi scales of Zimet G.D, Dalhem N.W, Zimer S.G and Farley G.K (1988). This scale is a 12- question valid tool evaluates 3 sub-scales of perceived social support in three areas of family, friends and important persons in the society. The questionnaire has favorable internal consistency. The whole test alpha coefficient is 0.899 and the alpha coefficients of its sub-scales are between 0.883 and 0.902. This questionnaire also has good concurrent and factor validity. Moreover, the validity of test structure is also favorable [41]. The validity of questionnaire in the current research is also calculated as 0.9 using Cronbach's method.

The data have been analyzed using Pearson's correlation coefficient and regression analysis (simple and multi) and by the help of SPSS16.

Results

In table 1, the summary of descriptive indexes related to the research variables are presented.

Table 1. Summary of descriptive indexes related to the research variables

variable	post traumatic growth	perceived social support	self-efficacy
Mean	74.02	35.05	25.23
Variance	183.404	95.923	63.053
Std. Deviation	13.543	9.794	7.941

In table 2, the correlation between self-efficacy and perceived social support with PTG are shown.

As it can be seen, the correlation between self-efficacy and PTG (0.368) at $\alpha=0.01$ and correlation

Table 2. Correlation Coefficient between self-efficacy and perceived social support with PTG

variable	post traumatic growth	perceived social support	self-efficacy
post traumatic growth	1	0.326**	0.368**
perceived social support	0.326**	1	0.168**
self-efficacy	0.368**	0.168**	1

between perceived social support and PTG (0.326) at $\alpha=0.01$ are significant.

The table 3 shows results of regression analysis for 2 steps. The first step; the variable of self-efficacy has been entered to the regression equation. In this case, the determination coefficient is 0.135, it means that self-efficacy describe 13.5 percent of the PTG changes. In the second step, by adding variable of perceived social support, the amount of coefficient is equal to 0.207. It means that these two

variables jointly describe 20.7 of PTG changes. Also, the results of table 3 show that the regression model is significant at all two steps. The calculated F in the first step is equal to 14.537; this value has degrees of freedom equal to 1 and 93, in the second step. This value is equal to 12.007 and the degrees of freedom are 2 and 92 which in all three steps, the value are more than critical amount that show the regression model is significant.

Table 3. The results of regression Analysis for forecast of PTG by independent variables

Description	SS	df	MS	F	R	R ²	ΔR^2	Sig
Regression of self-efficacy	2330.5	1	2330.5	14.537	0.368	0.135	0.126	0.000
Residual	14909.5	93	160.3	-	-	-	-	-
Total	17240	94	-	-	-	-	-	-
Regression of self-efficacy, perceived social support	3568.4	2	1784.2	12.007	0.455	0.207	0.190	0.000
Residual	13671.5	92	148.6	-	-	-	-	-
Total	17240	94	-	-	-	-	-	-

Table 4 survey the regression equation. As it can be seen in the results, in the first step, the self-efficacy variable can explain PTG in the level of 99%. In the second step by adding perceived social support, the significance level of the model is also

99%. In this case (second step), both of self-efficacy and social support variables are significant in the level of 99%. The t values for the aforesaid variables are 3.420 and 2.886 significantly.

Table 4. Stepwise regression coefficients of self-efficacy, perceived social support

Step	Coefficient	Unstandardized Coefficients		Beta	t	Sig.
		B	Std. Error			
1	Constant	58.199	4.348	-	13.384	0.000
	self-efficacy	0.627	0.164	0.368	3.813	0.000
2	Constant	46.987	5.711	-	8.227	0.000
	self-efficacy	0.544	0.161	0.322	3.420	0.001
	perceived social support	0.376	0.130	0.272	2.886	0.005

Discussion

As it can be concluded from the research findings, there is a significant relation between self-efficacy and PTG in the patients with cancer with error probability of 1%. A probable explanation for the current finding is that according to Bandura's theory, self-efficacy has important role in psychological compatibility of an individual. Also, people with high amount of self-efficacy would achieve better results regarding self-management and the hope to life is higher in these people. People, who believe that they are able to control problematic and threatening conditions such as cancer, can effectively, overcome problems and have lower amounts of stress and depression. The people with self-efficacy choose tasks with higher level of challenges and better goals and they have more stability regarding those goals, they believe in their abilities and more probably, they put in all of their efforts to achieve success [42]. Though they have some obstacles and negative events on their way, they will have more perseverance. They can cope with the disappointing consequences of cancer and continue their way and consider cancer as a temporary retreat rather than a final result. These people act confidently and are able to control the stresses before they appear. Indeed, people with self-efficacy, have less vulnerability against stressful events. These individuals are aware of their weaknesses and strengths and choose realistic goals and have logical self-expectations, and are aware of using concentrated confrontation on the problem instead of concentrated confrontation on excitement. They are brave and social and have high amount of self-esteem and control over their lives. Therefore, it can be said that these people are optimists and achieve PTG more quickly, this means that after severe traumas, changes in basic beliefs and changes in the identity and their self-perception will be created as high amount of self-approval and self-efficacy which can have effective role on controlling and treating cancer. The achieved results are compatible with previous researches.

Manne et al. (2006) and Loh and Quek (2011) have mentioned in their study on people with cancer that there is a positive significant correlation between mental and performance compatibility against cancer during time and its relation with different aspects of self-efficacy and psychological interventions [19, 43]. Mystakidou (2010), Hirai and Suzuki (2002) have surveyed in their research, the

relation between self-efficacy, balance and compatibility with related signs of cancer and also psychological problems such as depression and tension which is followed by cancer and have recognized self-efficacy as a moderating and promising factor in compatibility and improving cancer [44, 45]. Lorig et al. (1999) showed that the increase of self-efficacy is related to control of some signs such as fatigue, activity imitations and number of checkups by the doctor [46] and also it causes self-care improvement in the patients [47]. Chan, Miranda and Surrence (2009), Johnson et al. (2010) have shown in different studies about moderating factors against suicide risk caused by negative events of life such as chronic headache and cancer. Self-efficacy acts as a protector against disappointment during the period of stressful events (such as diagnosing the cancer) and leads to resistance against suicide [48, 49]. In the researches by Cunningham et al. (1991) and Carolyn et al (2001), there is strong positive correlation between self-efficacy with quality of life, positive behavior, optimism and life satisfaction and PTG and mental positive changes have been introduced as an experience of fighting with challenging conditions of life which can followed by high amount of self-efficacy and challenges with individual's belief [50, 51].

According to the findings obtained from the current research, there is a significant relation between perceived social supports with PTG with 1% of error probability. To explain these findings, it can be pointed out that social support has effective role in reducing stress. Supportive actions, improve the way of encountering stress and understanding existing supports causes to evaluate potentially the less stressful treating conditions. In fact, the perceived social support helps cancer patients to achieve PTG sooner because as Joseph Linely says (2006), these positive changes can bring changes in interpersonal relationships and more gratitude about family and friends, friendship and altruism [14]. Tedeschi (1999) believes that PTG brings a favorable and satisfying sense about a person, feeling of competence and spontaneity while facing life challenges or more specifically, changes in interpersonal relationships, closer relationships with family members, other relatives and friends, reconciliation, more altruism, more sensitivity against the others, accepting helps by the others and also helping others. All of the above items are achievable through existence and understanding of

social support and social network. Among the patients with cancer, accepting helps from the others acts as a barrier against negative consequences of the disease and also as a kind of treatment, thus, brings a strong relation with patient's psychological performance [52]. The social cognitive processing theory is a useful framework to survey social themes in PTG. In this theory, the social support interactions may cause easing or preventing cognitive processing toward achieving PTG. These findings are in accordance with the previous studies as:

Nenova et al (2013); Bozo et al. (2009) and Scheroevers et al (2010) found in their studies on cancer patients that there is a significant relation between PTG with social support and its other fields of study [53-55]. Schexnaildre (2011) defined the share of coping, social supports and PTSD severity in anticipating children and adolescence' trauma caused by Katrina Hurricane and social supports and skills of coping as significant anticipator of PTG [6]. In the research by Love and Sabiston (2011), the results showed that the perceived social support has importance in taking proper compatibility strategies to bear pain and suffering by the youth relieved from cancer and developing and improving experiences of PTG [56]. In the research done by Vellone et al. (2006) in Italy, there was significant relation between hope, positive effects caused by trauma and family's support, relationships with the doctors and nurses in the hospital, retaining relationships with friends and feeling comfortable with them [57].

In the second step, it has been approved that theory of self-efficacy and social support has significant share in anticipating PTG. The value of corrected determination coefficient shows that this model can explain 20.7% of PTG variance. The obtained data from this theory is compatible with the previous studies. Luszczynska et al. (2005) have concluded in a longitudinal study about shares of self-efficacy and social support in anticipating positive effects using confrontation strategies to overcome new position of cancer patients that self-efficacy beliefs have direct effects on growth, acceptance of life defect and increase of sensitivity about the others. Although social support would affect family relationships improvement and its effects has no mediator, in order to achieve self-efficacy in coping with new position, confrontation strategies had been used as mediator [58]. Gallant (2003) found that high amount of social support is parallel with self-efficacy improvement in chronic diseases [59].

Conclusion

These days, diagnosis of chronic disease such as cancer, exposes the person with some mental and physical requirements regarding compatibility with the disease. The compatibility sometimes includes lack of defined amount of efficiency. Also, this item required new skills and changes in common daily life in order to manage signs of the disease and coping with treatment needs. The chronic disease often impose high amount of loads on the people and their family and have strong effects on their mental health and quality of life. According to previous studies, PTG has effective role in patients' compatibility with some treatment status and their lives. In this study, we have formulated effective anticipator variables in a statistical plan frame and analyzed significance and non-significance and also linear equation related to them using research and statistical methods such as Pearson's correlation and multi-variables regression. This plan can be considered as a procedure to achieve positive effects and their effects on mental health and quality of life in patients with cancer and it also can indicate prevention priorities regarding negative consequences or interventions in perception change and negative effects of the disease and PTG improvement.

The obtained results showed that two anticipator variables have positive correlation and significant relation with PTG. Generally, the future interventions should be designed to survey personal, family and social effective determinants related to PTG in cancer patients. This study considering above variables shows how psychological interventions can cause prevention of the disease negative consequences and effects and improve mental health and satisfaction of life

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Conflict of Interest

The authors have no conflict of interest in this study.

Authors' Contribution

Farah Lotfi-Kashani, Mohammad Esmaeil Akbari and Leila Shamkoeyan designed and wrote this article, Nahid Kazemi-Zanjani collected the data, Shahram Vaziri analyzed the data. All authors read and approved the final manuscript.

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