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Correlation between Components of General Health with Posttraumatic Growth in Cancer Patients

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ABSTRACT

The present study aims to investigate correlation between components of general health with posttraumatic growth in cancer patients. Question of research is, if Components of general health anticipate posttraumatic growth. The present study is quantitative, non-experimental and the correlative. Population included men and women aged 14-72 years diagnosed with any kind of cancer in Tehran and Zanjan, from 1391 till 1392 .95 men and women were selected as available samples. Data were collected by general health questionnaire (GHQ) and posttraumatic growth inventory (PTGI) and were analyzed by simple and multiple regression analysis. Findings indicated that general health variables, depression, somatic symptoms, anxiety and insomnia and social dysfunction are predictors of positive changes after trauma. Thus, by increasing the "social function", "posttraumatic growth" also increases and with increasing "anxiety", "physical symptoms" and "depression", "posttraumatic growth" is reduced. Therefore it can be concluded components of general health is effective in facilitating posttraumatic growth so performing psychological interventions can help to facilitate patients to achieve positive change and improve their quality of life.

KEYWORDS: Posttraumatic growth; components of general health; cancer

INTRODUCTION

Although the researches in posttraumatic growth are not developed yet, to know that suffering and pain can be the source of growth, dates back to thousands years ago. For example, some of the ideas and writings of Greek, early Christians, some training of Hinduism, Buddhism and Islam are some elements of potential power of tolerating pain and suffering. The most considerable example is Nietzsche proverb "What doesn't kill me makes me strong" (1). Posttraumatic growth means the change in self- perception, changed sense of relating to others, life philosophy, the change in fundamental beliefs and the change in identity as self-confirmation and high self-efficacy as the result of challenge with severe traumas (2).

Tedeschi and Calhoun and Mcmillan (2000) defined Posttraumatic growth as "the experience of positive change after the challenge or a severe crisis in life. For example, a person managing the challenge with the death of his partner can discover his personal power during the experience of this event. It is possible he loses fear to the future as he feels "If I could survive the event, I can survive anything". Or a person coping up with a disease such as cancer over time can experience deep changes in his preferences and takes decision to spend more time with his family (3). To perceive Posttraumatic growth term, various terms are used as Stress-Related Growth, actualization, perceived benefit, progress, changing status and finding benefit. Tedeschi and Calhoun stated the reason of using Posttraumatic growth as: First, Posttraumatic growth refers to the growth after a severe hardship. Thus, it is opposite to stress-relate growth. Second, some of the above terms refer to the internal coping mechanism based on a process. It is stated that Posttraumatic growth is both a process and outcome. Third, the Posttraumatic growth is distinctive from the terms referring the personal features of a person as flexibility. The terms refer to the features allowing people to cope with the damaging events while Posttraumatic growth refers to the change beyond resistance to hardship or not being damaged to the hardship (4). Posttraumatic growth is stated as all people have some beliefs and assumptions about the world causing the guidance of their acts and can create goals and meaning in life. When traumas are not in accordance with our beliefs and assumptions, they can challenge our perception of the world and cause that people fight with the new events and this can lead to considerable level of stress. If people change the reality of their life by cognitive re-making of the beliefs, the new assumptions are resistant and Posttraumatic growth is occurred. It is important to say that people don't benefit the growth systematically or consciously and Posttraumatic growth is the result of attempt to cope up or survival (5). According to Tedeschi and Calhoun (2004) ,

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positive changes are not direct result of trauma and is the fighting of a person with new realities after trauma that is vital in its occurrence. The positive changes occurred after an event threatening the person and the world and cognitive process is the center of change. The event can lead to cognitive re-making and change is the product of re-making (7). Fighting with trauma is one of the facilitating factors of growth and the severity of event has a potential for Posttraumatic growth. Thus, the change is different form one person to another (2). The factors causing growth or distress are divided into three factors:1- Pre-trauma factors, 2- During trauma factors and 3- Post-trauma factors. Pre-trauma factors are the attributes affecting a person and environment as mental problems, demographic variables (e.g. gender, personality disorder and pathology factors). During trauma factors include the attributes and events occurring during trauma as the type and severity of trauma and the damage of trauma. The reaction of a person and others to trauma as cognitive evaluation, coping strategies or social support is post-trauma factors (8). The Posttraumatic growth is inclined to be occurred in five general fields. Sometimes the people facing with severe crises feel they have new opportunities for challenge. The second field is the change in relation to others. Some people experience close relationship with special people and can experience an increasing sense of relationship with other injured people. The third field of the changes is including the increase of personal power. The fourth aspect of Posttraumatic growth that is experienced by some people is more perception of life as generally and the fifth field is including spiritual or religious growth. Some people experience the depth of their spiritual life. The depth can include considerable changes in a person belief (6). Indeed diagnosis of threatening diseases including cancer besides physical problems has various effects on mental health and life quality of the patient (9). The reduction of life quality in the patients with cancer leads to losing job, family disruption, disturbance in inter-personal relations and the lack of ability in doing personal-family and social duties (15). Hopko et al. (2008) stated that basic depression and anxiety are common among the patients with cancer and leads to the reduced life quality and losing the meaning of entertainment and worsening physical activities, difficulty in relations, sleep problem, rapid growth of disease symptoms and more pain (26). The social disorder is one of the causes of cancer as an effective factor in reduction of life quality of the patient (27). The cancer and the problems of treatment creates many physical problems for the patient (e.g. pain, exhaustion, neural system changes, concentration problem, sleep disorder, losing weight) as is debilitating for the patient and has mutual effect on mental health of this group of patients (32). Somatic symptoms reduce a person efficiency, depression, anxiety and hopelessness and disturb life quality of a person (15). As it was said, all mental health components (depression, anxiety, somatic symptoms and social function) have important role in the life quality of a person. By doing psychological interventions, we can increase the general health of the patient and bring positive changes for a person. General health increases self-efficacy of a person, life quality and self-esteem of the patient and causes that the patient apply suitable solutions for management and coping up with the disease and the person capability is developed in various fields as effective and efficient inter-personal relations, life satisfaction and job satisfaction (9). As Somatic symptoms causes close relation of the patient with others, more life perception, spiritual growth and the increase of personal power, it is expected that it is related to the general health of the patient. As in our country, the concept of life quality, mental health and related factor in patients with cancer are less considered and these types of patients are less investigated for psychological interventions, the present study determined the share of general health components in Posttraumatic growth in the patients with cancer and the results of the study besides supporting the patients with cancer leads to the planning and performing the effective intervention plans in this regard.

METHODOLOGY

The present study is applied in terms of purpose and a quantitative study in terms of study method, non-experimental-correlation. The study population of the present stud y is including all the women and men with cancer in Tehran and Zanjan towns during 2012-2013. Of the population, 95 patients with cancer at the age 14-72 years were selected among the patients attending Shohadaye Tajrish hospitals, Valiasr of Zanjan and charity foundation of Mehrane Zanjan as convenient sampling.

The inclusion criteria of the study were passing about 6 to 7 months of cancer diagnosis, not having cancer in the fourth level, having treatment experience as surgery, chemotherapy and radiotherapy. The applied instruments in the study were demographic information of the patients, 28-item General Health Questionnaire (GHQ) and 21-item Post traumatic growth inventory. In GHQ questionnaire, there were 28 questions in four fields of depression, anxiety, somatic symptoms and social performance and is scored in Likert scale 4-item as 0,1,2, 3. In this instrument, the increase of score is with the severe condition of the mental health. To estimate general health test, the existing researches underwent meta-analysis. The results showed that average sensitivity of GHQ-28 questionnaire was 84% and average specificity was 82% (33). To evaluate the reliability of the general health test, according to Colberg (1989), the study of internal consistency that is measured by Cronbach's alpha is the best

method. Koldberg by the review of the studies by test-retest and the calculation of Cronbach's alpha coefficient reported reliability high and acceptable. Yaghubi (1996) in Iran validated general health test on 625 people living in urban and rural areas of Somesara with Likert scoring and reported the sensitivity and specificity of the test in the best score of cutting point was 86.5% and 82%, respectively (11).

The Post traumatic growth inventory is a self-reporting scale that is developed by Tedeschi and Calhoun (1996) and is consisting of 21 terms and five factors. The factors include new facilities, relationship with others, personal power, changes and appreciating the life. This scale is made based on five-item Likert scale (0= I didn't experience this change as crisis outcome to 4= I experienced this change as crisis outcome at great level) and it reflects the inclination to perceiving growth and benefits of damaged events. The total score PTGI is the sum of five factors. The maximum total score is 105. Tedeschi and Calhoun reported that PTGI has considerable validity with internal consistency of scale 0.90 and internal consistency of its scales from 0.67 to 0.85. The reliability of test-retest of the scale was 0.71 (13). The reliability of the questionnaire in the local study by standardized Cronbach's alpha was 0.885 and it showed high internal consistency of the items with each other (12).

The data were analyzed by regression analysis (simple and multiple) by SPSS software, version 16.

RESULTS

In this study, 17% of the patients were at the age 36 to 40 years old, 84.9% of the patients were women, 81.7% married and 50% with education under diploma, 40% with the income 500 thousands to 1,000,000 toman, 47% with breast cancer, 38.8% with disease diagnosis time, 12 months to 2 years and 77.2% without the severity of disease .

Table 1- Multi-variate regression to predict Posttraumatic growth via general health components

Significance level	F value	Mean of squares	Degree of freedom	Sum of squares	Variance
0.001	11.26	1427.55	4	5710.23	Regression
		126.68	90	11401.68	Residual

Based on the above table and with emphasis on the F value, it can be said that there is a significant association between general health components with Posttraumatic growth at the level α=0.01. The prediction capability of Posttraumatic growth is done via general health components. To identify and determine the regression coefficients, it is necessary to consider regression coefficient table.

Regression coefficients of Table 2

Significance level	T value	Beta coefficient	Predicting variables	Criterion variable
0.343	-0.95	-0.13	Somatic symptoms	Posttraumatic growth
0.236	-1.19	-0.20	Anxiety	
0.155	1.43	0.19	Social function	
0.001	-4.04	-0.49	Depression	

Table 2- Univariate regression to predict Posttraumatic growth via somatic symptoms

Significance level	F value	Mean of squares	Degree of freedom	Sum of squares	Variance
0.001	15.06	2385.91	1	2385.91	Regression
		158.34	93	0.0114726	Residual

Based on the above table and with emphasis on the F value, it can be said that there is a significant association between somatic symptoms with Posttraumatic growth at the level α=0.01. The prediction capability of Posttraumatic growth is done via somatic symptoms. To identify and determine the regression coefficients, it is necessary to consider regression coefficient table.

Regression coefficients of Table 2

Significance level	T value	Beta coefficient	Predicting variables	Criterion variable
0.001	-3.88	-0.37	somatic symptoms	Posttraumatic growth

Based on univariate regression coefficient with concurrent method, it can be said that there is a negatively significant association between “somatic symptoms” and “Posttraumatic growth”. By the increase of “Somatic symptoms”, Posttraumatic growth is reduced and by its reduction, “Posttraumatic growth” is increased.

Table 3- Univariate regression to predict Posttraumatic growth via anxiety

Significance level	F value	Mean of squares	Degree of freedom	Sum of squares	Variance
0.001	15.64	2463.82	1	2463.82	Regression
		157.50	93	0.09 14648	Residual

Based on the F value, it can be said that there is a significant association between anxiety with Posttraumatic growth at the level α=0.01. The prediction capability of Posttraumatic growth is done via anxiety. To identify and determine the regression coefficients, it is necessary to consider regression coefficient table.

Regression coefficients of Table 3

Significance level	T value	Beta coefficient	Predicting variables	Criterion variable
0.001	-3.95	-0.37	Anxiety	Posttraumatic growth

Based on univariate regression coefficient with concurrent method, it can be said that there is a negatively significant association between “anxiety” and “Posttraumatic growth”. By the increase of “anxiety”, Posttraumatic growth is reduced and by its reduction, “Posttraumatic growth” is increased.

Table 4- Univariate regression to predict Posttraumatic growth via social function

Significance level	F value	Mean of squares	Degree of freedom	Sum of squares	Variance
0.001	22.24	3303.36	1	3303.36	Regression
		148.47	93	/55 13808	Residual

Based on the F value, it can be said that there is a significant association between social function with Posttraumatic growth at the level α=0.01. The prediction capability of Posttraumatic growth is done via social function. To identify and determine the regression coefficients, it is necessary to consider regression coefficient table.

Regression coefficients of Table 4

Significance level	T value	Beta coefficient	Predicting variables	Criterion variable
0.001	4.71	0.43	Social function	Posttraumatic growth

Based on univariate regression coefficient with concurrent method, it can be said that there is a positively significant association between “social function” and “Posttraumatic growth”. By the increase of “social function”, Posttraumatic growth is increased and by its reduction, “Posttraumatic growth” is decreased.

Table 5- Univariate regression to predict Posttraumatic growth via depression

Significance level	F value	Mean of squares	Degree of freedom	Sum of squares	Variance
0.001	42.13	5335.46	1	5335.46	Regression
		126.62	93	/45 11776	Residual

Based on the F value, it can be said that there is a significant association between depression with Posttraumatic growth at the level α=0.01. The prediction capability of Posttraumatic growth is done via depression. To identify and determine the regression coefficients, it is necessary to consider regression coefficient table.

Regression coefficients of Table 5

Significance level	T value	Beta coefficient	Predicting variables	Criterion variable
0.004	-6.49	-0.55	Depression	Posttraumatic growth

Based on univariate regression coefficient with concurrent method, it can be said that there is a negatively significant association between "depression" and "Posttraumatic growth". By the increase of "depression", Posttraumatic growth is decreased and by its reduction, "Posttraumatic growth" is increased.

DISCUSSION

Based on the results of the study, there is a significant association between depression and Posttraumatic growth among the patients with cancer. Determining the probability for the finding is that the depressed patient focuses on his weaknesses and feels inadequate and spend all the energy to the feelings that is not useful for the conformity with the disease and its demand (doing therapy processes) and he is mostly suffering from some problems as somatic symptoms, the problems in hurting beliefs about life and avoidance method is used and in long-term it avoids psychological conformity and helplessness symptoms are increased (31). Depression has negative effects on performance, life quality, hospital stay and therapy result. Also, it affects the performance of body immunity components and healing cancer (30). The people who experienced depression less can control threatening situations as cancer. Life expectancy is high in these people and they have high self-confidence and believe in their capabilities and view the situation optimistically and apply problem solving methods and have low negative thoughts (29). It can be expected that these patients rapidly achieve Posttraumatic growth. This result is consistent with some studies. The results of cross section study on 144 adult out-patients showed that majority of participants (87%) at least reported a positive change and Posttraumatic growth was associated with the physical and mental health (18). The study conducted by Eliton and Birier (2008) showed that depression symptoms was associated with stress disorder symptoms after trauma and Posttraumatic growth had negative association with depression and when 2 years or more were passed of the event, the relation was stronger (20). Hart et al., (2008) investigated the relationship between depression, optimism, positive affection and finding positive changes on the patients with multiple sclerosis (the time mean from disease diagnosis, 7 years) and including 77% women and the remaining were men. The results showed that reduction of depression symptoms significantly predicted the positive changes during one year (21). Based on the results of the present study, there is a significant association between anxiety and Posttraumatic growth. It can be said that negative emotions as anxiety causes that the mind of a person is only restricted to producing defensive reaction to the issues creating negative emotions and a person has no suitable reaction (19). According to Diner (2002) the people without anxiety have positive evaluation of themselves and their life and have good conformity to the medical treatment and the lack of anxiety is with good function and mental health. Kavamato (1999) considered the lack of anxiety in direct relation with the increase of health of appetite, sleep, memory, friendship and family relations and mental health (30). As the lack of anxiety is associated with mental health, it can be said that the people without anxiety rapidly achieve Posttraumatic growth. The results were in line with the previous studies. The longitudinal study by Frazier et al. (2001) on sexual rape survivors in 2 weeks and 12 weeks after rape was done. 2 Weeks after trauma, showed negatively significant association between depression and anxiety and Posttraumatic growth and those who experienced change at first, during 12 months after rape significantly had lower depression and anxiety (3).

In the present study, there was a significant association between social function and Posttraumatic growth. Brown and Harris (2004) believed that one of the factors improving the life quality of the patients with cancer is social performance. Alkin, Brown and Muger (2003) in their studies on patients with cancer found that social performance caused that a person feels less inability of work and evaluates his role in life positive and it causes self-esteem re-making of the patient and the person considers his self-efficacy more and less is possible to suffer from psychological problems as depression and anxiety (29). Social function reduces inability feeling and can find good ways to manage his disease and cope up with the disease symptoms and be hopeful about the future (28). A few researches are done in this regard and the results were consistent with the previous studies. Helegzon et al., (2006) underwent meta-analysis investigation on 87 studies. The result is achieving the positive changes with low depression and high social function (9).

According to the results in the present study, there is a significant association between physical symptoms and Posttraumatic growth. This finding shows that reduction of physical symptoms increased the efficiency and less damage goes to the job, family and social affairs and he has more energy and capability to care himself and when a person has good self-care, he feels better day by day. His mood is better and the situation is considered less threatening (27). These changes can predict after trauma changes. The results were in line with the previous studies. A study was done by Muriel et al., (2008) to evaluate biological-mental-social health factors of the cancer survivors. The participants were 165 survivors of different types of cancer and an internet inventory was used to evaluate stress perception, symptoms of post trauma stress disorder, Posttraumatic growth and physical health. The results of the study showed that Posttraumatic growth was associated with better life quality and reduction of somatic symptoms (22). Tomich and Helegzon (2002) found that growth was associated with high scores of physical health in the

patients with cancer and the correlation was average (23). In this study, the researcher dealt with some limitations as convenient sampling method, not controlling some interfering variables as age, education and economic-social status of the study samples and this led to the reduction of internal validity.

CONCLUSION

Diagnosis of chronic diseases including cancer is with some crises in mental and social fields and imbalances the life and affects the life quality of the patient (9). These patients for better consistency with the existing conditions need social supports and psychological interventions (15). Based on the previous studies, Posttraumatic growth had important role in conformity of the patients with some of therapy situations and their life (12). Thus, recognizing the facilitating factors of Posttraumatic growth and its development is an important measurement to improve life quality of the patients with cancer and patients family. Based on the present study findings, it can be said that general health components (depression, anxiety and sleep disorder, physical symptoms and social function) were important in facilitating Posttraumatic growth and by effective intervention and psychological plans, we can take a big step that the patients achieve Posttraumatic growth and improvement of their life quality.

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