The Relationship of Posttraumatic Growth with quality of life in cancer patients

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ABSTRACT

Posttraumatic growth (PTG) is a person's mental experience of positive psychological changes induced by encountering extremely challenging situations. This study aimed to investigate the concept of posttraumatic growth and its relationship with quality of life (QOL) in cancer patients. This is a descriptive cross-sectional study. The study population consisted of cancer patients referred to two main cancer referral hospitals in Iran. Samples included 154 patients that met study inclusion criteria, and were selected by convenient sampling. Study tools included demographic details questionnaire, "posttraumatic growth inventory", and "SF-36". Data were analyzed using SPSS-15 software. Mean age of study subjects was found 44±14.27 years, and 56.5% of them were female. In this study, mean score of PTG was 71.14±14.5, mean QOL score was 60.24±19 in the physical dimension, and 59.86±17.6 in the mental dimension. Significant correlations were found between PTG and the physical dimension of QOL (r=0.183, P=0.02) as well as the mental dimension (r=0.245, and P=0.002). Also, significant correlations were observed between dimensions of personal strength, appreciation of life, and new possibilities, with QOL. However, this correlation was inversed in relation to spiritual changes. PTG rate, especially in the dimension of spiritual changes was high in cancer patients, and a direct and significant correlation was observed between PTG and QOL.

Keywords: posttraumatic growth, quality of life, cancer

INTRODUCTION

In recent years, researchers systematically attempted to understand and examine positive changes following stressful events [1-2], and identified these events as a facilitating factor in positive changes of psychology [3]. Tedeschi and Calhoun were the very first researchers that studied the subject and named these positive changes “posttraumatic growth (PTG)”, which has been defined as a person's mental experience of positive psychological change, caused by encountering extremely challenging situations in life such as harms, crisis, and stressful events [2]. It is not just the diagnosis, but treatment of cancer is blameworthy as well in creating stressful situations. As well as creating physical problems for the patients, cancer causes many psycho-social problems, and such reactions as denial, anger, and guilt [4]. Various physical and psycho-social problems lead to disruption in the normal trend of life and its quality. Quality of life (QOL) is a multidimensional and complex concept, and involves objective and subjective factors, and has been accepted as a criterion for assessment of treatment outcomes and status of patients with physical and mental disorders [5].

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patients with cancer, like other chronic diseases, enhancement of QOL is the primary purpose of care, and the care team endeavors to improve their health and QOL.

PTG is a phenomenon that may occur in cancer patients [6-7]. Tedeschi and Calhoun [2] recognize 5 dimensions for PTG: new possibilities, relationship with others, appreciation of life, personal strength, and spiritual changes. Although many studies have investigated the relationship between PTG and QOL, the relationship between these two variables in cancer patients has been associated with conflicting results. In a study by Hallam 2012, a direct and significant correlation was observed between PTG and QOL [8]. In a study by Teodorascu et al. [2012], a direct and significant correlation between PTG and the mental dimension of QOL was also identified [9]. Bellizzi et al. showed that there is no significant correlation between PTG and the physical dimension of QOL, but the mental dimension of QOL has an inverse correlation with PTG [6].

Given that in the Iranian society, the concept of QOL and its associated factors have less been considered, and given conflicting results of various studies in the area of relationship between PTG and QOL in the above patients, the aim of this study was to assess the relationship between PTG and QOL in cancer patients.

MATERIALS AND METHODS

The present study is a descriptive correlative study in which patients referred to oncology wards and cancer clinic at Imam Khomeini (the largest oncology center in Iran) and Tajrish-Shohada hospitals in Tehran comprised the study population. Sampling was conducted using simple sampling method and study inclusion criteria. A total of 154 patients qualified for participation in the study (in 2013). Patients who were informed of their definitive cancer diagnosis confirmed by an oncologist entered the study. A minimum of at least one year since diagnosis and treatment, minimum age of 21 years, and no history of severe psychiatric disorders like schizophrenia were other study inclusion criteria.

In this study, demographic details questionnaire, posttraumatic growth inventory (PTGI), and the Short Form of Health Survey (SF-36) were used as tools of the study. The PTGI consists of 21 items that determine the 5 domains of psychological growth after encountering a stressful event (new possibilities, relationship with others, appreciation of life, personal strength, and spiritual changes). This tool is based on the 6-option Likert scale with scores: not at all=0, very little=1, a little=2, moderate=3, a lot=4, and very much=5, ranging from 0 to 105, and higher scores indicating higher PTG, and lower scores indicating lower PTG. The reliability and validity of the instruments were examined by the researchers for the first time in Iran, and the 5-factor structure of the PTGI was approved. Coefficient alpha for the entire instrument was $\alpha = 0.87$, and the coefficient obtained for the 5 main scale components was $\alpha = 0.57-0.77$. The correlation between two times performing the test with a 30 day interval in 18 samples was $r = 0.75$. The most common and comprehensive existing general standard tool for assessment of QOL is the 36-item questionnaire that is used internationally as a standard health outcomes measuring tool. Psychometric analyses have shown that this questionnaire is a reliable tool, with applicability in different cultures [10]. Validity and reliability of this tool for use in Iran were found by Montazeri et al. [11]. Internal consistency coefficient of its scales was found between 0.77 and 0.9.

Every study subject was briefed about the objectives and methods of the study, their cooperation was requested, and questionnaires were completed by the patients (questions were explained by an interviewer to illiterate patients). After collection and coding, data were analyzed using SPSS-15 software. The descriptive statistics included frequency, mean, and standard deviation, and in the analytical statistics, based on the existing assumptions, statistical tests such as Chi-square, Fisher’s exact test, and Pearson and Spearman’s correlation coefficient were used.

RESULTS

Mean age of the study subjects was 44±14.27 years, and 56.5% were female. Other demographic details are presented in table 1.

Table 1: Demographic details of the cancer patients referred to Imam Khomeini and Shohadai Tajrish hospitals in Tehran-2012

<table>
<thead>
<tr>
<th>%</th>
<th>Number</th>
<th>Categories</th>
<th>Variables</th>
<th>%</th>
<th>Number</th>
<th>Categories</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>49.4</td>
<td>76</td>
<td>Tehran</td>
<td>Place of residence</td>
<td>56.5</td>
<td>87</td>
<td>Female</td>
<td>Gender</td>
</tr>
<tr>
<td>50.6</td>
<td>78</td>
<td>Other cities</td>
<td></td>
<td>43.5</td>
<td>67</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>52.7</td>
<td>81</td>
<td>1 year</td>
<td>Duration since diagnosis</td>
<td>19.5</td>
<td>30</td>
<td>Single</td>
<td>Marriage status</td>
</tr>
<tr>
<td>16.2</td>
<td>25</td>
<td>2 years</td>
<td></td>
<td>73.4</td>
<td>113</td>
<td>Married</td>
<td></td>
</tr>
<tr>
<td>9.1</td>
<td>14</td>
<td>3 years</td>
<td></td>
<td>7.1</td>
<td>11</td>
<td>Widowed/divor</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 presents a full description of scores of PTG and its dimensions in study subjects. In this study, mean score of PTG was 71.14±14.5 (table 2).

<table>
<thead>
<tr>
<th>Components</th>
<th>Maximum score</th>
<th>Mean</th>
<th>%</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>New possibilities</td>
<td>25</td>
<td>14.3</td>
<td>57.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Communication with others</td>
<td>35</td>
<td>25.35</td>
<td>72.42</td>
<td>5.6</td>
</tr>
<tr>
<td>Personal strength</td>
<td>20</td>
<td>13.75</td>
<td>68.75</td>
<td>3.4</td>
</tr>
<tr>
<td>Appreciation of life</td>
<td>15</td>
<td>10.16</td>
<td>67.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Spiritual changes</td>
<td>10</td>
<td>7.55</td>
<td>75.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Total score of posttraumatic growth</td>
<td>105</td>
<td>71.14</td>
<td>67.75</td>
<td>14.5</td>
</tr>
</tbody>
</table>

Mean score of QOL in the physical dimension was found 60.24±19, and in the mental dimension 59.86±17.6. It was identified that there is a significant correlation between physical dimension of QOL (r=0.183 and P=0.02) and mental dimension of QOL (r=0.245 and P=0.002) and PTG. There was a significant correlation between PTG dimensions of: personal strength, appreciation of life, and new possibilities with physical and mental dimensions of QOL, and an inverse correlation between spiritual changes and QOL (table 3).

**Table 3: Correlation between posttraumatic growth and quality of life, using Pearson test**

<table>
<thead>
<tr>
<th>Physical dimension of QOL</th>
<th>New possibilities</th>
<th>Communication with others</th>
<th>Appreciation of life</th>
<th>Personal strength</th>
<th>Spiritual changes</th>
<th>Overall PTG</th>
</tr>
</thead>
<tbody>
<tr>
<td>R=0.219</td>
<td>R=-0.05</td>
<td>R=0.178</td>
<td>R=0.30</td>
<td>R=-0.13</td>
<td>R=0.183</td>
<td>P=0.006</td>
</tr>
<tr>
<td>P=0.006</td>
<td>P=0.55</td>
<td>P=0.027</td>
<td>P=0.000</td>
<td>P=0.1</td>
<td>P=0.02</td>
<td>P=0.006</td>
</tr>
</tbody>
</table>

**DISCUSSION**

In this study that was conducted with the aim to examine the relationship between QOL and PTG in cancer patients, mean score of PTG was higher compared to mean scores found in cancer patients in other studies [6-7], or even non-clinical samples in some studies [12-13]. These results indicate high PTG in cancer patients in the Iranian society. Given the scores obtained in the two dimensions of spirituality and relationship with others, one of the influential factors in high PTG score in the Iranian society could be induced by religious teachings in this society because people turn to spirituality to adjust to incurable diseases (14). A second factor that can be involved is increased level of relationships in these patients; as studies have shown, patients' relationships increase with chronic diseases [15].

Unlike most previous studies [6-7, 12-13], the highest positive change in the subjects was observed in the spiritual dimension. In the findings of a study by Morris et al., spiritual changes scored the lowest [7]. Also, in the study by Teodorescu et al. [9] it was identified that the highest growth was in appreciation of life dimension, while the lowest growths were observed in the two dimensions of new possibilities and relationship with others. Given the religious attributes of the Iranian people, the highest growth in cancer...
patients can be expected to be in spirituality. Previous studies also indicate spirituality as one of the main strategies for compliance with cancer in the Iranian society [14]. Unlike findings in previous studies showing conflicting results regarding the relationship between PTG and QOL, and some literatures finding a weak positive significant relationship, and some others reporting an inverse weak relationship between these two, in this study, a significant and relatively high relationship was observed between the physical and mental dimensions of QOL with PTG. In the Hallam study [8], a direct and significant relationship was identified between PTG and QOL, so that, patients with some degree of growth, have better QOL. Results of a study by Teodorescu et al. [9] also showed a direct and significant relationship between PTG and the mental dimension of QOL.

Also, unlike findings of the present study, in the study conducted by Bellizzi et al. investigating the relationship between QOL and PTG in cancer patients, it was shown that there is no significant relationship between these two variables [6]. In a study by Tomich and Helgeson [16] on the relationship between PTG and QOL, higher growth was associated with lower mental dimension of QOL. In the meta-analysis conducted by Helgeson et al. [17], on the PTG predicting factor, it was shown that growth has no relationship with the general QOL, or its physical and psychological dimensions [17]. As well as the significant correlation between PTG and QOL found in the presents study, correlations were also observed between QOL and all dimensions of PTG except the spirituality dimension. Study results showed that personal strength is directly and significantly correlated with the physical and psychological dimensions of QOL. This is important because it shows that people who have become stronger as a result of the struggle with the disease report more desirable QOL.

Appreciation of life and creating new possibilities also have a direct and significant correlation with QOL, and scores of physical and mental dimensions of QOL increase with increasing scores of appreciation of life and new possibilities. It appears that patients that hadn't lost hope because of cancer, and have new plans for their lives, or have been able to appreciate their remaining health and capabilities, and reinforce them or make use of their capabilities advantageously, have better QOL compared to other patients. An interesting point in this study was the inverse correlation between spiritual changes and physical and mental dimensions of QOL; patients with low QOL reported higher spiritual growth, both from the physical and mental dimensions. This inverse correlation is explained by the fact that more stress experienced by the person leads to more growth [6]. Normally, people are entangled in daily life, and realize their own physical and psycho-social needs; Illness causes the person to be distanced from ordinary life, and pay attention to his own spiritual and higher needs [14]. In fact, illness is the trigger that forces the person to assess him, and attempts to modify his shortcomings, and get closer to transcendent aspects of life, and thus achieve some degree of growth.

Regarding the positive relationship between PTG and QOL in this study, it is suggested that care providers including nurses, psychologists, and even the clergy should use the potential grounds for growth in adjustment of these patients with the stressful event of cancer and increase their QOL.

It is recommended that in future studies other influential factors in PTG in the Iranian society be investigated. One of the study limitations was low education level of nearly 25% of patients, and questionnaires were completed through interviews conducted by the researcher.

ACKNOWLEDGMENT
This article was part of a PhD thesis in nursing and an approved research plan of Shahid Beheshti University of Medical Sciences, Iran. The authors’ sincere appreciation goes to all the authorities and employees of the Department of Nursing and Midwifery of Shahid Beheshti University of Medical Sciences, and cancer wards of medical and educational centers of Shohadaye Tajrish and Imam Khomeini Hospital, and all the patients who participated in this study.

REFERENCES

CITATION OF THIS ARTICLE