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Post-traumatic growth in stomach cancer survivors: Prevalence, correlates and relationship with health-related quality of life

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A B S T R A C T

Purpose: Post-traumatic growth (PTG) is defined as positive psychological changes experienced as a result of struggle with highly challenging life circumstances. Interest in PTG has increased in cancer survivorship care; however, little is known about PTG among stomach cancer survivors. This study aimed to examine the prevalence and correlates of PTG, and to identify relationships between PTG and health-related quality of life (HRQOL).

Methods: Cross-sectional descriptive design. In total, 122 stomach cancer survivors were recruited from one university hospital in South Korea. Measurements included the Korean version of the Post-traumatic Growth Inventory and the Functional Assessment of Cancer Therapy – General Population.

Results: Over half (53.3%) of the participants experienced moderate to high levels of PTG. 'Change of self-perception' was the most common growth domain, followed by 'relating to others', 'new possibilities' and 'spiritual change'. Older age, low socio-economic status (i.e. low education level and low monthly income) and lack of religion were associated with lower levels of PTG. Survivors with higher levels of PTG had better social/family well-being ($P < 0.001$) and better functional well-being ($P < 0.001$).

Conclusions: Psychological interventions to enhance PTG may have a positive effect on impaired HRQOL among stomach cancer survivors.

Introduction

Stomach cancer is the fifth most common malignancy in the world (Ferlay et al., 2013), and the second most common malignancy in Korea (National Cancer Information Centre, 2013). Due to early detection and treatment advances, the survival rate increased in Korea from 42.8% in 1993–1995 to 62.7% in 2004–2008 (National Cancer Information Centre, 2013). As the number of long-term survivors has increased, interest in the health-related quality of life (HRQOL) of stomach cancer survivors has also increased. Research on HRQOL among stomach cancer survivors has mainly focused on negative consequences such as nutritional and functional problems, feelings of depression and uncertainty about the effectiveness of treatment and recurrence, and deteriorated HRQOL (Bae et al., 2006; Wu et al., 1997).

Somewhat surprisingly, however, studies have shown that a high percentage of cancer survivors also report positive changes after cancer treatment (Jansen et al., 2011; Lelorain et al., 2010; Salsman et al., 2009). Tedeschi and Calhoun (1996) described such changes as 'post-traumatic growth' (PTG), defined as positive psychological changes experienced as a result of struggle with highly challenging life circumstances (Tedesch and Calhoun, 2004). Dimensions of PTG include enhanced interpersonal relationships, appreciation for life, spirituality, personal strength and positive changes in life priorities (Tedeschi and Calhoun, 1996). PTG may reflect a cognitive adaptation process in response to a cancer diagnosis (e.g. a positive interpretation) (Helgeson et al., 2006). This process may enable cancer survivors to positively reframe the cancer experience as a transition, and perceive potential benefits. Therefore, positive consequences of cancer, such as PTG, have been investigated to obtain a comprehensive understanding of the adjustment of cancer survivors to their disease (Jansen et al., 2011).

Perceived growth as a result of a cancer diagnosis, treatment and survivorship is reported by 60–95% of cancer survivors (Stanton et al., 2006). Correlates of PTG include sociodemographic factors (age, gender, socio-economic status and ethnicity) (Brix

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et al., 2013; Jansen et al., 2011; Schmidt et al., 2011; Schroevers et al., 2010; Widows et al., 2005), disease-related factors (stage of disease, time since diagnosis and treatment type) (Jansen et al., 2011; Nenova et al., 2013; Tomich and Helgeson, 2012) and psychosocial factors (coping strategies, social support, depression and HRQOL) (Bellizzi et al., 2009; Brix et al., 2013; Lelorain et al., 2012; Mols et al., 2009; Nenova et al., 2013; Park et al., 2010; Schmidt et al., 2011; Tomich and Helgeson, 2012). However, results have been inconclusive regarding sociodemographic factors and treatment-related factors, particularly regarding the association between PTG and HRQOL (Helgeson et al., 2006; Stanton et al., 2006); positive, negative and null relationships between PTG and HRQOL have been documented (Helgeson et al., 2006; Salsman et al., 2009; Schroevers and Teo, 2008; Schulz and Mohamed, 2004). Several hypotheses may explain these inconsistencies, including various post-traumatic stress levels and PTG within individuals (Morrill et al., 2008).

To date, most studies of PTG in cancer survivors have been conducted among breast cancer survivors (Bellizzi et al., 2009; Brix et al., 2013; Lelorain et al., 2010; Mols et al., 2009; Morrill et al., 2008). Recently, PTG has been examined in other populations including colorectal cancer survivors (Jansen et al., 2011), mixed cancer diagnosis survivors (Schmidt et al., 2011; Schroevers et al., 2010; Tomich and Helgeson, 2012), and survivors who underwent haematopoietic stem cell transplantation (Nenova et al., 2013). These studies reported discrepancies in PTG levels, relationships with treatment-related factors and potential determinants of PTG. Therefore, further studies on PTG in various cancer populations are needed. Moreover, most studies to date have been conducted in Western countries, but attitudes towards cancer or adjustment style could differ between Western and Asian cultures. According to a recent national survey in Korea, cancer stigma was common; over 30% of cancer survivors had negative attitudes towards cancer, and approximately 10% experienced social discrimination due to cancer (Cho et al., 2013).

To gain further insight into PTG in stomach cancer survivors in Korea, the current study was developed to examine the prevalence and correlates of PTG, and to identify relationships between PTG and HRQOL.

Methods

Study design and participants

This study had a cross-sectional descriptive design. Participants were stomach cancer survivors from the Outpatient Department of Surgical Oncology at a university hospital in South Korea. Subjects were eligible to participate if they: (1) were over 18 years old; (2) had undergone surgery over 12 months ago; (3) had no other cancers; and (4) were literate in Korean. Participants were recruited using a convenience sampling method. Of the 149 subjects with stomach cancer screened from July to September 2012, 21 subjects had undergone surgery within the past 12 months. Among 128 potentially eligible subjects, five (3.9%) refused to participate in this study. The main reasons given were that the survey took too long to complete, that the survey was inconvenient or that the patient felt too ill. Of the 123 subjects who consented to participate in the study, one subject refused during the survey because he had difficulty understanding the questionnaire. As such, 122 stomach cancer survivors (95.3%) were included in the final analysis.

Data collection

Potential participants were identified and the purpose of the study was explained. Each participant was provided with an informed consent form, and a questionnaire was administered upon signed agreement to participate. The protocol and consent form for the study were reviewed and approved by the institutional review board.

Measurements

Korean Version of the Post-Traumatic Growth Inventory (K-PTGI)

The original version of the PTGI was developed by Tedeschi and Calhoun (1996) to measure positive outcomes reported by people who had experienced a negative life event. It consisted of 21 items and five domains: 'relationships with others', 'new possibilities', 'appreciation of life, 'spirituality' and 'personal strength'. The PTGI was validated in Korea by Song et al. (2009). A confirmatory factor analysis reported by Song et al. (2009) had a slightly different factor structure. The K-PTGI consists of 16 items and four domains: 'change in self-perception', 'relating to others', 'new possibilities' and 'spiritual change'. Song et al. (2009) reported high internal consistency (Cronbach's alpha 0.91) and good concurrent validity. Items are rated on a six-point Likert scale, ranging from 0 ('did not experience this change as a result of my cancer diagnosis') to 5 ('experienced this change to a very great degree'). Higher scores represent greater growth. In the present study, Cronbach's alpha for the 16 items overall was 0.94, and Cronbach's alpha for the four domains ranged from 0.84 to 0.91.

Functional Assessment of Cancer Therapy – General Population (FACT-GP)

HRQOL was measured using FACT-GP, which is a generic measure (Brucker et al., 2005). FACT-GP (21 items) excludes six items from the cancer-specific version, FACT-G (27 items), and does not include questions regarding cancer or cancer-related treatment. Although the subjects were a cancer population, FACT-GP was selected because the majority of the participants had completed their cancer therapy, so some questions about cancer-specific tools were irrelevant for the participants. FACT-GP comprises 21 items and four subscales evaluating physical well-being, social/family well-being, emotional well-being and functional well-being. The physical well-being domain measures a subject's perception of lack of energy, pain, side effects, and time forced to spend resting. The social/family well-being domain asks subjects about how their disease affects emotional support, friendships and family. The emotional well-being domain centres on a subject's sadness, nervousness, coping and worrying. Finally, the functional well-being domain differs from the physical domain by concentrating on work duties, life activities, sleep quality and contentment with life. Items are rated on a five-point Likert scale [ranging from 0 ('not at all') to 4 ('very much')]. FACT-GP subscales and overall summary scores were pro-rated using the scoring algorithms provided in the Functional Assessment Chronic Illness Therapy manual to obtain scores (Cella, 1997). FACT-GP summary scores range from 0 to 108, and higher scores represent better HRQOL. In this study, Cronbach's alpha for the total score was 0.84, and Cronbach's alpha for the four subscales ranged from 0.71 to 0.82.

Sociodemographic and clinical characteristics, and disease impact characteristics

Sociodemographic characteristics (e.g. age, sex, marital status, education, religion, job, monthly income, personality) were obtained using self-report questionnaires. Clinical characteristics (e.g. stage of disease, tumour progress, time since operation, operation type, chemotherapy) were obtained from medical charts. Disease impact characteristics included perceived

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