

Reappraising Cancer: Life Priorities and Growth

Juliane Strack^a Paulo Lopes^b Manfred Gaspar^c

^aDepartamento de Psicologia Social e das Organizações, ISCTE – Instituto Superior de Ciências do Trabalho e da Empresa

^bFaculty of Economics and Management, Catholic University of Portugal, Lisbon, Portugal

^cPsychosoziale Abteilung, Klinik Nordfriesland, Fachklinik für onkologische Rehabilitation und Anschlussheilbehandlung (AHB), St. Peter-Ording, Germany

Key Words

Posttraumatic growth · Emotion · Emotion regulation · Gratitude · Reappraisal

Summary

Background: People who have undergone traumatic life experiences such as cancer often report a new meaning and greater appreciation of life. These subjectively experienced positive changes are referred to as posttraumatic growth (PTG). The present study investigated correlates of PTG in cancer patients. **Patients and Methods:** 128 cancer patients at a rehabilitation clinic in Germany completed self-report questionnaires. **Results:** Cognitive reappraisal of emotion, gratitude finding, and openness to experience correlated with PTG. Patients also reported different priorities in life after cancer, reflecting more present-oriented and intrinsic concerns. **Conclusions:** Our findings suggest that reappraising emotions and adjusting life priorities may help cancer patients to experience PTG by facilitating emotion-focused coping and reframing an apparently adverse situation as a positive experience.

Schlüsselwörter

Posttraumatisches Wachstum · Emotion · Emotionen regulieren · Dankbarkeit · Erfahrungen neu bewerten

Zusammenfassung

Hintergrund: Traumatische Lebenserfahrungen wie zum Beispiel eine Krebserkrankung verschaffen dem Leben oft neuen Sinn und größere Wertschätzung. Posttraumatisches Wachstum («Posttraumatic Growth», PTG) nennt man die subjektiven positiven Veränderungen, die man nach einem negativen Erlebnis erfährt. Diese Studie untersuchte, welche Faktoren mit PTG bei Krebspatienten korrelieren. **Patienten und Methoden:** 128 Krebspatienten einer Rehabilitationsklinik in Norddeutschland beteiligten sich und füllten die Fragebögen aus. **Ergebnisse:** Die Resultate weisen darauf hin, dass es bestimmte Bedingungen für eine positive Veränderung gibt. Dazu zählen: Erfahrungen sollte man aufgeschlossen gegenüberstehen, Emotionen müssen effektiv reguliert werden und man sollte Dankbarkeit empfinden können. Wichtig erscheint auch, dass man Erfahrungen neu zu bewerten lernt. Bei der Analyse der Neuordnung von Prioritäten fanden wir heraus, dass Patienten sich nun mehr auf die Gegenwart und innere Werte konzentrierten. Erwartungen an die Zukunft verloren an Bedeutung. **Schlussfolgerungen:** Unsere Resultate deuten darauf hin, dass die Regulierung von Emotionen Patienten hilft, ihre Erfahrungen neu zu bewerten und die traumatischen Erfahrungen sinnvoll einzuordnen. Die Resultate verraten aber auch, dass die Regulierung von Emotionen und die verschärfte Wahrnehmung der eigenen Sterblichkeit die Chance eröffnen, die wahren Prioritäten des Lebens herauszufinden, indem man eine bedrohliche Situation als positive Herausforderung verarbeitet.

Introduction

Facing a traumatic experience such as a cancer diagnosis is usually associated with high levels of psychological distress [1]. However, the experience of trauma can also inspire some people to change in positive ways. This phenomenon is known as posttraumatic growth (PTG) [2]. PTG can occur in different circumstances [3], one of these being cancer [4]. Many individuals who have survived cancer view the struggle with the event as a catalyst for transformation and personal growth. In line with the perspective of PTG as an outcome of a struggle with a traumatic event [2], the present study aims to investigate factors associated with PTG in cancer patients.

PTG describes the experience of individuals who do not only recover from trauma, i.e. return back to pre-trauma functioning after a period of emotional distress, but use it as an opportunity for further development [5]. This means that these individuals have developed beyond their previous level of adaptation, psychological functioning, or life awareness [3]. PTG is considered to encompass three broad domains: changes in self-perception, changes in interpersonal relationships, and a changed philosophy of life. These changes can be observed in individuals who have undergone traumatic life experiences and report feeling stronger and more self-assured as a result of their struggle [4]. Many individuals experience an increased connectedness with others and a deeper sense of empathy [2]. Individuals also tend to report a new perspective on life. This may reflect existential and spiritual growth, or a changed philosophy of life.

Despite PTG being observed in many individuals who have undergone stressful and traumatic life experiences, there is a lack of research on the factors that facilitate PTG [6]. Moreover, not everyone experiences PTG. Many cancer patients experience clinical levels of distress and dysfunction, including anxiety, depression and posttraumatic stress disorder (PTSD) [1]. Therefore, it is important to find out how to help cancer patients experience PTG, which is associated with lower levels of depression, distress and PTSD over time [7, 8].

Correlates of PTG

One factor that may facilitate PTG is the personality trait 'openness to experience'. Individuals who are open to new experiences tend to be imaginative, emotionally responsive, and intellectually curious [9]. This may enable them to attend to the positive changes that can result from struggling with and overcoming a difficult experience. Tedeschi and Calhoun [2] found that openness was positively associated with PTG, in particular with the dimensions New Possibilities and Personal Strength (subscales of the Posttraumatic Growth Inventory [2]). In regard to different facets of openness, openness to feelings correlated most strongly with PTG.

This suggests that emotions may play a role in the growth process. Positive emotions have been suggested to facilitate adaptive coping [10], and may therefore aid the recovery and

growth process [11]. For example, Fredrickson et al. [12] found that positive emotions can fully account for the relationship between pre-crisis resilience and post-crisis growth. The cognitive broadening that accompanies states of positive emotions may expand and improve the ways people cope during crises [11].

One particular positive emotion we will investigate in relation to PTG is gratitude. Apart from its adaptive effects as a positive emotion [13], gratitude may enable the individual to find meaning in the trauma. Experiencing gratitude protects against aversive emotions that individuals may experience following a traumatic experience, such as resentment or regret, bitterness, or a feeling that life is unfair [13, 14]. Individuals who can experience gratitude despite being diagnosed with cancer may also be more capable to draw out the positive side of this experience and consequently experience PTG.

As positive emotions facilitate adaptive coping, we also expected particular emotion regulation strategies that promote positive emotions to be associated with PTG. A strategy that has been suggested to promote positive emotions is cognitive reappraisal [15]. Reappraisal refers to changing the way one thinks about a situation to alter its emotional impact. This way, strong emotions in response to traumatic life experiences may be regulated, and this particular strategy may help people to experience positive emotions in the face of adversity. These positive emotions in turn may help the individual to cope with the crisis [12].

Adjusting Priorities in Life

Furthermore, we investigated how PTG is associated with a perceived shift in priorities in life, here defined as what people consider important and are most concerned about at the time. A diagnosis of cancer is likely to remind people of their mortality and thus may increase their awareness that they have limited time to live. As explained by the socio-emotional selectivity theory [16], individuals who perceive their future time as limited tend to prioritize present-oriented goals. In contrast, individuals who perceive their future time as open-ended tend to prioritize future-oriented goals such as materialism, career interests and wealth [16].

We also hypothesized that new priorities would reflect intrinsic rather than extrinsic values and goals. PTG can be characterized as a shift towards intrinsic goals, i.e. goals that are oriented towards building meaningful and lasting resources and satisfying existential human needs for autonomy, relatedness, competence and growth (e.g. building close relationships) [17]. On the other hand, the terror management theory suggests that reminders of mortality make people focus on extrinsic goals. The mortality salience hypothesis of the terror management theory suggests that people need self-esteem to provide a shield against the fear of death, and that this death-related anxiety motivates defensive behavior in order to strengthen self-esteem. Studies have demonstrated that mortality salience increases extrinsic goal orientations such as a

desire for materialistic possessions [18] and high-status products [19] as a way of increasing self-esteem.

How people are confronted with death seems to influence whether they focus on extrinsic (as suggested by the terror management theory) or intrinsic goals (as in PTG). For example, changes that facilitate PTG typically involve naturalistic challenges such as cancer, which not only involve confronting death but are also uncontrollable and occur over a long period of time. Terror management effects are usually observed in experimentally manipulated death reminders on a single occasion [17]. Consequently, for the present study, we expected PTG effects in cancer patients rather than the effects predicted by the terror management theory. We hypothesized that individuals who experience PTG following a cancer diagnosis come to terms with their condition by reappraising it in a positive light and adjusting their priorities in life rather than ignoring the threat. We argue that such individuals are likely to focus on pursuits and dimensions of life that they find meaningful and intrinsically rewarding, and from which they can derive satisfaction in the moment, rather than to focus on more distant goals that might seem less meaningful and attainable. This shift in life priorities may be observed in a greater focus on pursuits that contribute to physical and psychological well-being, as well as on relationships with good friends and valued family members. It may also lead to disengagement from long-term career goals that may be driven by an external pressure to succeed and may even be viewed as a 'rat race'. Salient life priorities are likely to influence behavior that contributes to PTG, as research suggests that translating growth cognitions into growth actions is crucial to deriving real growth from a traumatic experience [20].

To summarize, based on the above theory and research, we hypothesized that:

- (1) openness to experience, cognitive reappraisal, and gratitude will correlate positively with PTG;
- (2) cognitive reappraisal of emotion will be positively related to PTG even after controlling for age, gender, and openness to experience;
- (3) participants will report a shift in life priorities following cancer diagnosis, reflecting greater focus on present-oriented and self-driven concerns in the three realms of PTG (prioritizing themselves, their relationships, and their philosophy of life) and lesser focus on future-oriented goals such as those related to career achievement;
- (4) PTG will be associated with this shift in life priorities following cancer diagnosis, reflecting greater focus on present-oriented and self-driven concerns (in the three realms of self, relationships, and philosophy of life).

Methods

Participants

Of 128 cancer patients who took part in the study, 99.2% were German, 77 were women and 51 men. Age ranged from 21 to 80 years (mean (M) = 55, standard deviation (SD) = 12). All were staying at the same clinic for cancer patients in North Germany, either for follow-up treatment (14 days after completion of a chemotherapy or 4 weeks after completion of radiotherapy), or rehabilitation (1, 2 or 3 years after diagnosis). The clinic has an internal (system disease), gynecological and urological focus.

Measures and Procedure

Demographics included gender, nationality and age. PTG was measured with the 21-item Posttraumatic Growth Inventory [2, 21], which measures perceived positive changes after a trauma, using a 7-point Likert scale anchored at 1 ('I did not experience this change as a result of the illness at all') and 7 ('I experienced this change as a result of the illness to a strong degree'). It encompasses 5 domains: Appreciation of Life, Personal Strength, Relating to Others, Spiritual Change and New Possibilities. This inventory has been found to be unrelated to socially desirable responding [2]. Openness to experience was measured with the corresponding 10-item subscale of the Big Five Inventory [22, 23], which measures openness to creativity, intellect, artistic experiences and unconventionality. Cognitive reappraisal of emotion was assessed using the corresponding 6-item subscale of the Emotion Regulation Questionnaire [15]. Gratitude was assessed using the GQ-6, a 6-item scale that measures dispositional gratitude [24] (1 item that had very low item-total correlation in this sample was deleted to improve reliability). All these measures used a 7-point Likert scale.

Priorities in life were assessed by asking participants to list their priorities by order of importance before and after the cancer diagnosis: 'Please list your *current* priorities in life, in order of importance (starting with the most important) and using brief, one-line descriptions. By priorities we mean those concerns related to your goals and values that are most important and salient to you at this stage of your life.' 'Please list the priorities you had *before* you were diagnosed with cancer, in order of importance (starting with the most important). These priorities could be the same as or different from those that you listed on the previous page.'

Life priorities were coded as relating to self, health, friends, family, philosophy, enjoyment, achievement, and others. The first 5 categories map the 3 broad realms of change identified by the PTG theory, and reflect present-oriented and intrinsic concerns. Health and enjoyment were added as relevant present-oriented concerns. Achievement refers to future-oriented and extrinsic values such as career interests, wealth and social acceptance. Participants' responses were independently translated into English by 2 native German speakers, both of whom were blind to the hypotheses. Both coded the priorities using the coding scheme provided and achieved high inter-rater agreement (intra-class coefficients (ICCs) > 0.87). This allowed aggregating the two ratings for each participant.

The GQ-6 and the Emotion Regulation Questionnaire (ERQ) were translated into German and back-translated by different individuals to ensure accuracy. Questionnaires were distributed to patients at the clinic with an informed-consent form, reminding them that participation was voluntary.

Results

As can be seen in table 1, which reports descriptive statistics and correlations with PTG, our first hypothesis was supported: Openness, reappraisal and gratitude were positively related to PTG.

Hypothesis 2 was tested using multiple regression analysis and was also supported: After controlling for age, gender and openness to experience, reappraisal accounted for 22% of additional variance in PTG ($B = 0.50$, $t = 6.02$, $p < 0.01$; $F(4, 123) = 10.77$, $p < 0.01$).

Table 2 illustrates the paired-sample t-test for hypothesis 3, which compared the number of occurrences of each dimension of life priorities reported before and after cancer. As predicted, achievement was often reported as a priority before cancer, but was less often listed as a priority after cancer. Priorities related to self, philosophy and health were reported significantly more often after cancer, supporting hypothesis 3.

Table 2 also presents the correlations between PTG and the extent of change in priorities from before to after cancer. PTG was positively related to a change in prioritizing the dimensions self and philosophy of life, providing partial support for hypothesis 4, but was unrelated to changes in concerns related to friends and family.

Discussion

As predicted, openness to experience, gratitude and cognitive reappraisal of emotion were positively associated with PTG. Participants also reported life priorities reflecting PTG more often after their cancer diagnosis. These priorities represented intrinsically rewarding and present-oriented concerns (such as taking more time out for themselves, learning to say no to others' demands, trying to enjoy life more). Participants also reported that their illness had inspired them to experience new things, engaging in activities that brought them happiness, or being more religious, therefore reflecting changes in

philosophy of life. While priorities like these increased in importance after cancer, concerns related to achievement (e.g., career, recognition, and material concerns) became less important. The extent to which people reported greater concerns related to self and philosophy of life was positively related to PTG.

The findings suggest that reappraising emotions may be important for the experience of PTG. Insofar as reappraisers can regulate their emotional reactions effectively, they may also experience a sense of control over their environment and subjective experiences [15]. Consequently, people who tend to reappraise may experience PTG because they can take control over an adverse event such as cancer, by giving it meaning and drawing out positive aspects of the experience. Moreover, reappraising emotions may enable individuals to experience positive emotions [11]. Reappraisal has also been found to guard against negative moods [15] and therefore may protect cancer patients against the high levels of anxiety and depression that are usually associated with the experience of cancer [25, 26]. In particular, our findings suggest that experiencing gratitude, a positive emotion, may serve a protective function.

Readjusting priorities in life may be part of the process by which people reappraise a difficult situation, find meaning in an adverse experience and adapt to a shorter time horizon. Life priorities changed from future-oriented to present-oriented concerns following the diagnosis of cancer. This supports the socio-emotional selectivity theory [16] which states that, when people are aware of their limited future time, they focus less on long-term and future-oriented goals [16]. When people struggle with cancer, and thus face their own mortality, they may realize that time is limited. Hence, they may decide to make the most of the time they have left to live.

Table 1. Descriptive statistics and correlations with PTG

	M	SD	α	r
PTG	5.09	0.88	0.90	1
Openness	5.06	0.85	0.75	0.20*
Reappraisal	4.67	1.06	0.78	0.50**
Gratitude	5.86	0.81	0.61	0.35**

n = 128, * $p < 0.05$, ** $p < 0.01$.

Table 2. Change in life priorities: t-test and correlations with PTG

	t	Mean before cancer	Mean after cancer	Correlation with PTG
Self	-4.88**	0.13	0.42	0.20*
Health	-3.98**	0.34	0.58	-0.14
Friends	-1.99*	0.27	0.35	0.10
Family	-1.34	0.78	0.85	0.13
Philosophy	-6.06**	0.46	0.93	0.31**
Enjoyment	0.87	0.15	0.12	0.05
Achievement	7.37**	1.05	0.28	-0.13

n = 113, * $p < 0.05$, ** $p < 0.01$.

Participants who experienced greater PTG also tended to report a change in life priorities reflecting more intrinsic rather than extrinsic goals. This supports the PTG perspective rather than the perspective of the terror management theory which would argue for a shift towards extrinsic goals [19]. Our findings also provide indirect support for the theory of action growth [20], which proposes that people only achieve real PTG when they translate positive cognitions into action. When they indicated different life priorities after cancer, participants often reported experiencing new things, engaging in different activities, or taking more time out for themselves, reflecting action.

Illusory or Real Growth?

The present study relies on self-report data obtained at a single point in time, and therefore allows no inferences about causality. Moreover, retrospective reports of life priorities before cancer may be distorted by motivated reasoning. For example, if patients believe that they paid less attention to spiritual concerns before being diagnosed with cancer than they really did, this might contribute to an illusory perception of spiritual growth. According to the two-component model of PTG proposed by Maercker and Zoellner [27], PTG may reflect both illusory and real self-transformation. The latter component is assumed to grow over time, while the illusory component is thought to decrease over time.

The experience of cancer is different from many other traumatic experiences [28] in that there is often no clear end-point to it. Whereas PTG following acute traumas refers to past events, the experience of cancer is likely to make people fear for their future health. Cancer patients have to cope with an ongoing struggle rather than make sense of an event that belongs to the past. Thus, it may be more difficult to avoid thinking about the problem or to engage in defensive thinking patterns such as denial [28]. Sumalla et al. [28] suggest that the internal nature of a disease like cancer may play a key role in changing assumptions about the self (one dimension of PTG). Therefore, for cancer patients it may be particularly important to integrate their traumatic experience into their changed life story and sense of self and to adjust their priorities in life. Changing priorities may enable cancer patients not only to integrate their traumatic experience into a new sense of self, but also to transform growth cognitions (such as sense-making and benefit-finding) into action. Importantly, this has been found to facilitate constructive rather than illusory PTG [20].

It is possible that the perception of growth is driven at least in part by resilience and other personality traits associated with healthy and effective coping [5, 12]. It would be useful to isolate the adaptive significance of PTG, its long-term consequences, and the factors responsible for the development of

PTG in cancer patients through longitudinal studies that control personality variables and coping styles. It would also be useful to consider the diagnosis of cancer and the stage of the disease because the severity of trauma may influence the development of PTG [5].

Implications

In this study, we examined the relationship between emotion regulation and PTG to contribute to a new perspective on patients' adjustment to cancer. Zoellner and Maercker [5] argued that research on PTG has underestimated the role of emotions. Frederickson et al. [12] found that positive emotions in the aftermath of a crisis accounted for the relation between pre-crisis resilience and post-crisis growth. Our findings highlighted the role of gratitude in PTG. Future research may examine the role of other emotions and specific emotion regulation strategies as predictors of PTG, using longitudinal designs.

In light of the converging evidence from other studies, our findings also have implications for practice. Recognizing that emotion regulation and the experience of positive emotions such as gratitude are associated with the growth process should inform the design of therapy and support for patients. Therapists may encourage cancer patients to reappraise their emotions, and there is evidence that therapy can change emotion regulation strategies effectively [29]. In regard to the re-adjustment of life priorities, therapists may also encourage patients to focus on present-oriented and intrinsically rewarding concerns and activities to promote constructive PTG in cancer patients.

Conclusions

The perspective of PTG provides new insights to clinicians and therapists [5]. As suggested by Zoellner and Maercker [5], therapists have for a long time focused too closely on reducing symptoms of trauma rather than supporting their clients to grow from their traumatic experience. Therapists should understand how to promote PTG in their clients and recognize the patients' struggle to understand the impact of trauma as a potential precursor to growth [5]. For example, therapists may encourage cancer patients to reconsider life priorities, to find strength and inspiration in having survived such a difficult experience, to manage their emotions through cognitive reappraisal and to draw upon other resources.

Conflict of Interest

The authors declare that they have no conflict of interests.

References

- 1 Calhoun LG, Tedeschi RG: Handbook of Posttraumatic Growth, Research and Practice. Mahwah, NJ, Lawrence Erlbaum Associates, 2006.
- 2 Tedeschi RG, Calhoun LG: The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *J Trauma Stress* 1996;9:455–471.
- 3 Tedeschi RG, Calhoun LG: Posttraumatic growth: conceptual foundations and empirical evidence. *Psychol Inq* 2004;15:1–18.
- 4 Collins RL, Taylor SE, Skokan LA: A better world or a shattered vision? Changes in life perspective following victimization. *Soc Cognit* 1990;8:263–285.
- 5 Zoellner T, Maercker A: Posttraumatic growth in clinical psychology – a critical review and introduction of a two component model. *Clin Psychol Rev* 2006;26:626–653.
- 6 Linley PA, Joseph S: Positive change following trauma and adversity: A review. *J Trauma Stress* 2004;17:11–21.
- 7 McMillen C, Smith EM, Fisher RH: Perceived benefit and mental health after three types of disaster. *J Consult Clin Psychol* 1997;65:733–739.
- 8 Frazier P, Conlon A, Glaser T: Positive and negative life changes following sexual assault. *J Consult Clin Psychol* 2001;69:1048–1055.
- 9 Costa PT Jr, McCrae RR: NEO-PI-R Professional Manual – Revised NEO Personality Inventory (NEO-PIR) and NEO Five-Factor Inventory (NEO-FFI). Odessa, FL, Psychological Assessment Resources, 1992.
- 10 Folkman S, Moskowitz JT: Positive affect and the other side of coping. *Am Psychol* 2000;55:647–654.
- 11 Fredrickson BL: What good are positive emotions? *Rev Gen Psychol* 1998;2:300–319.
- 12 Fredrickson BL, Tugade MM, Waugh CE, Larkin GR: What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *J Pers Soc Psychol* 2003;84:365–376.
- 13 Fredrickson BL: Gratitude, like other positive emotions, broadens and builds; in Emmons RA, McCullough ME (eds): *The Psychology of Gratitude*. New York, Oxford University Press, 2004, pp 145–166.
- 14 Maguire P, Faulkner A: Communicate with cancer patients: Handling bad news and difficult questions. *Br Med J* 1988;297:907–909.
- 15 Gross JJ, John OP: Individual differences in two emotion-regulation processes: Implications for affect, relationships and well-being. *J Pers Soc Psychol* 2003;85:348–362.
- 16 Lang FR, Carstensen LL: Time counts: Future time perspective, goals, and social relationships. *Psychol Aging* 2002;17:125–139.
- 17 Lykins ELB, Segerstrom SC, Averill AJ, Evans DR, Kemeny ME: Goal shifts following reminders of mortality: reconciling posttraumatic growth and terror management theory. *Pers Soc Psychol Bull* 2007;33:1088–1099.
- 18 Arndt J, Solomon S, Kasser T, Sheldon KM: The urge to splurge revisited: further reflections on applying terror management theory to materialism and consumer behaviour. *J Consum Psychol* 2004;14:225–229.
- 19 Mandel N, Heine SJ: Terror management and marketing: he who dies with the most toys wins. *Adv Consum Res* 1999;26:527–532.
- 20 Hobfoll SE, Hall BJ, Canetti-Nisim D, Galea S, Johnson RJ, Palmieri PA: Refining our understanding of traumatic growth in the face of terrorism: moving from meaning cognitions to doing what is meaningful. *Appl Psychol Int Rev* 2007;56:345–366.
- 21 Maercker A, Langner R: Persönliche Reifung (Personal Growth) durch Belastungen und Traumata: Validierung zweier deutschsprachiger Fragebogenversionen. *Diagnostica* 2001;47:153–162.
- 22 John OP, Srivastava S: The Big Five trait taxonomy: History, measurement, and theoretical perspectives; in Pervin LA, John OP (eds): *Handbook of Personality: Theory and Research*. New York, Guilford, 1999, pp 102–138.
- 23 Lang FR, Lüdtke O, Asendorpf JB: Testgüte und psychometrische Äquivalenz der deutschen Version des Big Five Inventory (BFI) bei jungen, mittelalten und alten Erwachsenen. *Diagnostica* 2001;47:111–121.
- 24 McCullough ME, Emmons RA, Tsang J: The grateful disposition: A conceptual and empirical topography. *J Pers Soc Psychol* 2002;82:112–127.
- 25 Kagaya A, Okamura H, Takebayashi M, Akechi T, Morinobu S, Yamawaki S, Uchitomi Y: Mood disturbance and neurosteroids in women with breast cancer. *Stress Health* 2003;19:227–231.
- 26 Sheard T, Maguire P: The effect of psychological interventions on anxiety and depression in cancer patients: results of two meta-analyses. *Br J Cancer* 1999;80:1770–1780.
- 27 Maercker A, Zoellner T: The Janus face of self-perceived growth: toward a two-component model of posttraumatic growth. *Psychol Inq* 2004;15:41–48.
- 28 Sumalla EC, Ochoa C, Blanco I: Posttraumatic growth in cancer: reality or illusion? *Clin Psychol Rev* 2009;29:24–33.
- 29 Giese-Davis J, Koopman C, Butler LD, Classen C, Cordova M, Fobair P, Benson J, Kraemer H, Spiegel D: Change in emotion-regulation strategy for women with metastatic breast cancer following supportive-expressive group therapy. *J Consult Clin Psychol* 2002;70:916–925.