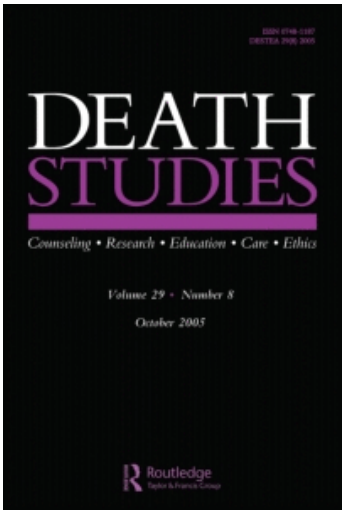
This article was downloaded by: *[Tel Aviv University]*
On: *15 March 2010*
Access details: *Access Details: [subscription number 794091185]*
Publisher *Routledge*
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Death Studies
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713657620

Meaning in Life and Personal Growth among Pediatric Physicians and Nurses

Orit Taubman-Ben-Ari [a]; Adi Weintroub [a]
[a] School of Social Work, Bar Ilan University, Ramat Gan, Israel

To cite this Article Taubman-Ben-Ari, Orit and Weintroub, Adi(2008) 'Meaning in Life and Personal Growth among Pediatric Physicians and Nurses', Death Studies, 32: 7, 621 — 645
To link to this Article: DOI: 10.1080/07481180802215627
URL: http://dx.doi.org/10.1080/07481180802215627

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: http://www.informaworld.com/terms-and-conditions-of-access.pdf

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Death Studies, 32: 621–645, 2008
Copyright © Taylor & Francis Group, LLC
ISSN: 0748-1187 print/1091-7683 online
DOI: 10.1080/07481180802215627

Routledge
Taylor & Francis Group

MEANING IN LIFE AND PERSONAL GROWTH AMONG PEDIATRIC PHYSICIANS AND NURSES

ORIT TAUBMAN–BEN-ARI and ADI WEINTROUB
School of Social Work, Bar Ilan University, Ramat Gan, Israel

Studies examining medical teams indicate that exposure to the terminally ill often has detrimental effects on their physical and emotional well-being. However, recent theoretical developments suggest that this exposure might also have positive implications. The current study sought to examine 2 positive outcomes, meaning in life and personal growth, among physicians and nurses working with hospitalized children and exposed to different levels of patient mortality. In addition, the contribution of level of secondary traumatization and the personal resources of professional self-esteem and optimism were examined. The sample consisted of 58 physicians and 66 nurses working in pediatric hemato-oncology, pediatric intensive care units, and pediatric internal medicine wards in Israel. The findings indicate that a higher level of exposure to patient death, higher optimism, and professional self-esteem, and lower secondary traumatization predicted the sense of meaning in life, whereas occupation, as well as higher professional self-esteem and higher level of secondary traumatization, especially among lower professional self-esteem individuals, predicted a higher experience of personal growth. In addition, nurses reported higher levels of professional self-esteem, secondary traumatization, and personal growth than physicians. The theoretical and practical implications of the results are discussed.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Positive psychology stresses the importance of focusing on human strengths and the positive implications of stressful life events and transitions to promote optimal functioning and quality of life (Seligman & Csikszentmihalyi, 2000). With this in mind, the current study sought to explore the effect of their work on a population routinely exposed to stressful circumstances, physicians and nurses in pediatric hospital wards. Although the constant encounter with sick

Received 14 May 2007; accepted 3 August 2007.
This research was conducted by Adi Weintraub under the supervision of Orit Taubman–Ben-Ari as part of the requirements for a Masters degree at the School of Social Work, Bar-Ilan University.
Address correspondence to Orit Taubman–Ben-Ari, School of Social Work, Bar Ilan University, Ramat Gan, 52900 Israel. E-mail: taubman@mail.biu.ac.il

and dying children can be expected to engender stress reactions and experienced hardship, it might also have positive consequences, such as enhancing meaning in life and personal growth. To examine this possibility, we investigated whether these outcomes would emerge as a result of the degree of exposure to the death of young patients and whether they were affected by personal resources, namely level of optimism and professional self-esteem. Moreover, we examined the differences between the reactions of physicians and nurses to the setting in which they work.

Work-Related Exposure to Death

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Working with severely or terminally ill patients is liable to arouse feelings of grief, anger, and hopelessness (Rashotte, Fothergill-Bourbonnais, & Chamberlain, 1997). In some cases, this may even lead to symptoms of post-traumatic stress disorder as defined by the *DSM-IV* (American Psychiatric Association, 1994), such as intrusive memories, confusion, or lack of concentration (Gustavsson & MacEachron, 2002; McCue, 1982). Although the death of patients is part of the daily routine of the hospital staff, few studies have investigated the extent to which health care professionals suffer from such symptoms. The meager literature that exists suggests that it is not uncommon. Several reports can be found of physicians defined as post-traumatic after treating a large number of casualties, particularly when their patients subsequently died (e.g., Firth-Cozens, Midgley, & Burges, 1999). Moreover, Mills and Mills (2005) found that some 30% of emergency room interns reported at least one post-traumatic symptom.

Members of the medical staff who do not develop symptoms of PTSD may still suffer from secondary traumatic stress disorder as a result of the intensive treatment, empathy, and emotional involvement they invest in their patients. *Secondary traumatization* is defined as circumstantial emotions and behaviors that derive from knowledge of a traumatic event experienced by someone else. Also termed *compassion fatigue* (Figley, 1995) or *vicarious traumatization* (Pearlman & Saakvitne, 1995), it is evidenced by increased stress and preoccupation with the individual or collective trauma of one's patients. Thus, as a result of their empathy for the people with whom they come into close contact, caregivers may themselves become indirect trauma victims (Sabin-Farrell &

Turpin, 2003). The symptoms of secondary traumatization, although less severe, are similar to those of PTSD (Motta, Kefer, Hertz, & Hafeez, 1999), and include re-experiencing the traumatic event through repeated complaints or intrusive memories, avoidance of anything that might arouse recollections of the event, loss of interest, indifference, and emotional distress such as anxiety or depression (Hodgkinson & Shepherd, 1994). In many ways, these symptoms also resemble those of burnout (Figley, 1995).

The first studies of secondary traumatization among professionals were conducted on those treating post-traumatic soldiers (Haley, 1974), where it was found that as a result of their work with trauma victims, they too were liable to develop post-traumatic symptoms. Similar results were reported by later investigations of professionals such as psychotherapists and counselors working with the victims of sexual abuse (e.g., Schauben & Frazier, 1995), serious illness and disability (e.g., Gabriel, 1994), and the Holocaust (e.g., Danieli, 1994), indicating that psychotherapy with trauma survivors holds special hazards for clinicians. Studies examining the link between the level of stress and coping ability of oncology staff members and their degree of burnout also found that the interaction with cancer patients, and particularly the need to cope with death and dying, were major stressors that raised their level of burnout (Escot, Artero, Gandubert, Boulenger, & Ritchie, 2001; Isikhan, Comez, & Danis, 2004).

The literature therefore suggests that the greater the demands of the workplace and work-related physical and psychological stress, the higher the chances that he or she will experience secondary traumatization. In addition, people in the early stages of their professional development may be more vulnerable to this distress, whereas those who are more capable of forming interpersonal relations and finding sources of support may be less vulnerable (Isikhan et al., 2004; Pearlmann & MacIan, 1995). Moreover, certain variables were found to buffer the stress-related reactions. For example, Holland and Neimeyer (2005) found that medical and mental health personnel who work closely with dying and/or grieving patients, who reported greater frequency of daily spiritual experiences, also tended to report less physical, emotional, and cognitive burnout. In addition, a growing number of studies indicate that alongside the stress typifying secondary traumatization, professionals working with trauma victims also experience positive

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

changes, such as personal growth and a redefinition of meaning in life (Brady, Guy, Polestra, & Brokaw, 1999).

Personal Growth

Evidence has been accumulated that some people show tenacious resilience in the aftermath of adversity, and ultimately experience personal growth (Schaefer & Moos, 1992; Tedeschi & Calhoun, 1995). Growth is signified both by enhanced personal resources, such as a more positive self-esteem, increased social resources, and new coping skills, and by changes in life philosophies, including deeper spirituality, redefined priorities, and greater appreciation of life (Tedeschi & Calhoun, 1995, 2004). The potential for positive life changes has been examined in a variety of populations faced with traumatic circumstances, among them bereaved spouses and parents (e.g., Davis, Nolen-Hoeksema, & Larson, 1998), and cancer patients (e.g., Carver & Antoni, 2004), as well as among caregivers (Cohen, Colantonio, & Vernich, 2002).

More recently, studies indicated that clinicians working with trauma survivors perceive important work-related and personal benefits. Although most of the respondents reported experiencing intrusive thoughts or images of their patient's trauma at least once in their career, most noted that these incidents were short-lived and ceased quickly. Moreover, whereas a large percentage of the participants reported negative emotional responses such as grief, anger, and frustration, the majority revealed that working with trauma victims produced changes in their own personalities, including greater sensitivity, compassion, insight, tolerance, increased appreciation for the resilience of the human spirit, personal growth, and spirituality (Arnold, Calhoun, Tedeschi, & Cann, 2005; Brady et al., 1999).

Calhoun and Tedeschi (1999) suggested several ways in which this professional encounter might spark personal growth in therapists. Among them is the fact that the stories of trauma survivors may disclose impressive qualities, revealing that although human beings are vulnerable to greater losses than we might wish, they are also stronger than we might imagine. Furthermore, working with such people offers therapists an opportunity to reexamine their own world view and philosophy of life, deal with existential

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

questions, redefine priorities, and reassess the true importance of various aspects of their life.

As noted above, like psychotherapists treating trauma victims, the hospital staff involved with severely or terminally ill patients may also display symptoms of trauma or secondary traumatization. Such responses can be expected to be even stronger among those working with children. Nevertheless, to the best of our knowledge, the possibility of personal growth as a result of their work has never previously been examined in this population.

Although one of the aspects of growth is a change in the meaning a person attaches to his or her life, the concept of meaning in life has been used for several years independently of the definition of growth, and not necessarily in the context of coping with crisis or loss. We therefore chose to examine it separately in the current study as well.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Meaning in Life

Personal meaning is an expression of the value people place upon the events and course of their life and the significance they attach to their existence (Reker & Wong, 1988). An individually constructed, culturally based cognitive system, it influences an individual's choice of activities and goals and endows life with a sense of purpose, personal worth, and fulfillment (Wong, 1998). Two distinct quests for meaning in human experience have been identified, one revolving around comprehensibility and the other around significance (Janoff-Bulman & Yopyk, 2004). In trauma survivors, the inability to make sense of what happened and the apparent meaninglessness of the event may promote the creation of meaning in the form of an existential reevaluation of life or an enhanced sense of its worth and value (Janoff-Bulman, 2000). They come to relate to life as precious, an assessment that is fundamentally tied to the recognition of human mortality, random outcomes, and awareness of possible future loss. In a world that is not wholly comprehensible, outcomes are no longer assumed to be completely controllable or predictable, and thus survivors realize that living can no longer be taken for granted, and shift from a concern with the meaning of life to a focus on the meaning in life (Janoff-Bulman & Yopyk, 2004). It seems logical to assume that the daily exposure to the sickness and death of others might

engender the same sort of reassessment of life and death. This is consistent with the ideas of Frankl (1988), who suggested three ways to find meaning in life in the wake of distress: through creative values (i.e., by "doing a deed"); through experiential values (i.e., by experiencing something or someone we value); and through attitudinal values (i.e., such as the way we perceive suffering). Studies conducted among caregivers have indeed found that family and non-family caregivers create meaning by choosing to help and support others, and that higher meaning in life is related to higher psychological well-being and a more positive self-esteem (Cohen et al., 2002; Farran, Miller, Kaufman, Donner, & Fogg, 1999; Noonan & Tennstedt, 1997). In addition, agency-supported caregivers were found to report a higher level of purpose in life than individuals who were not caregivers (Rhoades & McFarland, 2000). No previous study, however, has specifically examined meaning in life among the hospital staff.

Research suggests that the potential to derive benefit from adversity may be more prevalent among individuals characterized by certain personality traits. In the current study, we chose to focus on two such individual differences—optimism and professional self-esteem—both of which are personal resources that may help the individual to cope with trauma or persistent stress.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Personal Resources: Optimism and Professional Self-Esteem

Optimistic people tend to expect things to go right and believe that, on the whole, their future experiences will be more positive than negative. As these expectations are stable over time and across contexts, they are likely to remain intact at times of adversity as well. On the other hand, pessimistic people do not expect things to go as planned and tend to foresee negative consequences. These general attitudes also affect the amount of effort individuals invest in achieving their goals, with pessimistic people making little or no effort to do so (Carver & Scheier, 2001; Scheier & Carver, 1992). In addition, numerous studies have found an association between dispositional optimism and quality of life, satisfaction, subjective well-being, and effective coping with a stressful life event or loss, both immediately following the event and several

years later (e.g., Chang, 1998; Cozzarelli, 1993; Scheier & Carver, 1992).

Although optimism may serve to counteract the negative consequences of a stressful life event, professional self-esteem may play a central role in overcoming the adverse outcomes of the stressful work demands, enhancing work satisfaction on the one hand and reducing burnout on the other (Carmel, 1997). *Self-esteem*, defined as people's need to think well of themselves (Rosenberg, 1979), is the product of a combination of various assessments and is measured in terms of the degree of subjective worth and importance individuals attribute to themselves in their interactions with others (Coopersmith, 1967). A positive self-esteem contributes considerably to the sense of confidence in one's ability to cope successfully with experiences, that is, to function effectively (Fitts, 1972). People with high self-esteem are therefore expected to succeed in tasks and interpersonal interactions, to behave in a positive, healthy, and efficient way, to have confidence in their attitudes and judgments, and to consider themselves competent. In contrast, low self-esteem is associated with self-rejection, low self-satisfaction, and a sense of worthlessness (Blascovich & Tomaka, 1991).

Individuals assess their own worth not only in terms of global self-esteem, but also in respect to specific domains in their life. *Professional self-esteem* is defined as the personal appraisal of one's professional abilities, performance, and value (Carmel, 1997). In the case of physicians, studies have found professional self-esteem to moderate the negative effects of their stressful work demands, correlating positively with work satisfaction and negatively with burnout. Interestingly, it has also been found to be associated with general life satisfaction, as well as with other variables such as health and family relations (Bernstein, 2000; Carmel, 1997).

The Current Study

In view of the literature, it would appear that the daily exposure to death and dying may have both negative and positive consequences for the hospital staff. On the one hand, the intense care, stress, empathy, and emotional involvement in their patients

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

may make these professionals vulnerable to secondary traumatization. On the other hand, the same circumstances may lead to personal growth and enhanced meaning in life. It is reasonable to assume that the ability to derive benefits from their work is a function not only of the setting, but also of the individual's personal resources.

The current study therefore sought to examine the link between routine exposure to death in the workplace and the sense of personal growth and meaning in life, and the degree to which this connection is affected by two personality traits, optimism and professional self-esteem, as well as by the potential stress reaction to the experienced stress, namely the secondary traumatization. As the study population was drawn from the medical staff of pediatric hemato-oncology wards, pediatric intensive care units, and pediatric internal medicine wards, it was possible to compare responses to different levels of exposure to death. It was predicted that greater exposure to patient death would be associated with more symptoms of secondary traumatization, but also with a higher sense of personal growth and meaning in life. In addition, we expected higher levels of optimism and professional self-esteem to predict personal growth and meaning in life. Moreover, we explored the differences between physicians and nurses on these variables, as no previous studies have investigated growth or meaning in either of these populations.

The following hypotheses were formulated:

1. Level of exposure to patient death would be positively related to the level of secondary traumatization.
2. Level of exposure to patient death and level of secondary traumatization would be positively related to the sense of personal growth and meaning in life.
3. Level of optimism and professional self-esteem would be positively related to the sense of personal growth and meaning in life.

In addition, the differences between physicians and nurses on the study variables, as well as the unique and combined contribution of the dependent variables to the independent variables of personal growth and meaning in life were examined.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Method

Participants

The sample consisted of 58 physicians (aged 29–60, $M = 40.2$, $SD = 9.4$) and 66 nurses (aged 23–56, $M = 36.2$, $SD = 8.4$) in pediatric hemato-oncology wards, pediatric intensive care units, and pediatric internal medicine wards in two large hospitals in central Israel. Of the physicians, 29 were men and 29 were women, and they had been in the profession for 1–35 years ($M = 11.52$, $SD = 9.8$). Of the nurses, 65 were women and 1 was a man, and they had 1–36 years of professional experience ($M = 13.2$, $SD = 9.0$). The physicians' exposure to deaths of patients in the previous six months ranged from 0 to 10 patients ($M = 3.37$, $SD = 3.28$), and the nurses' exposure ranged from 0 to 15 patients ($M = 3.45$, $SD = 3.81$).

Instruments

The Purpose in Life Test (PIL; Crumbaugh & Maholick, 1969) was used to assess meaning in life. The PIL consists of 20 items relating to sense of direction in life, clarity of life goals, fullness of life, and so forth. Respondents were asked to mark their position in respect to each item on a 7-point scale representing polar descriptions of the dimensions, with higher scores indicating greater sense of meaning and purpose in life. As Cronbach's alpha for the 20 items in the current sample was high (.87), each participant was assigned a meaning in life score equal to the average of his or her responses on all items.

The Posttraumatic Growth Inventory(PTGI; Tedeschi & Calhoun, 1996) was used to measure personal growth. The 21 items on this scale relate to personal and spiritual strengths, appreciation of life and new possibilities, and relationships with others (e.g., "I learned a great deal about how wonderful people are"; "I am able to do better things with my life"). For each statement, participants were asked to indicate the degree to which the change occurred in their life during the previous year. Responses are marked on a 6-point Likert-type scale, ranging from 0 (*I did not experience this change*) to 5 (*I experienced this change to a very great degree*). The original PTGI has shown both good internal reliability

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

(.90) and test-retest reliability (.71) over a two-month period (Tedeschi & Calhoun, 1996). In the present study, Cronbach's alpha was .90. Each participant was thus assigned a personal growth score equal to the average of his or her responses on all items, with higher scores indicating greater personal growth. In addition, scores were also calculated for each of the original five factors of that scale, after indication of reasonable Cronbach's alphas (.72 for new possibilities, .83 for relationships with others, .66 for personal strength, .78 for appreciation to life, and .67 for spiritual change). We will use the total growth score throughout the article and mention variations in the different factors scores where relevant.

The Secondary Trauma Scale (Motta, Newman, Lombardo, & Silverman, 2004) was used to assess secondary traumatization among participants. Originally designed to examine young adults who were close to someone who experienced a trauma, the scale consists of 18 items relating to reactions and emotions, e.g., "I have difficulty falling asleep or sleeping at night." Participants indicate the degree to which each statement applies to them on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*). The original scale was found to be valid and reliable (Motta et al., 2004). In the present study Cronbach's alpha was .86. Each participant was thus assigned a secondary trauma score equal to the average of his or her responses on all items, with higher scores indicating greater traumatization.

The Life Orientation Test (Scheier, Carver, & Bridge, 1994) was used to assess optimism. This 12-item scale, consisting of 8 optimism items and 4 distractors, relates to both positive and negative perceptions (e.g., "In uncertain times, I usually expect the best"). Participants were asked to indicate their degree of agreement with each statement on a 5-point scale ranging from 0 (*not at all*) to 4 (*very much*). The original scale was found to be valid and reliable (Schier et al., 1994). In the present study Cronbach's alpha was .72. Each participant was thus assigned an optimism score equal to the average of his or her responses on the eight relevant items, with higher scores indicating a higher level of optimism.

The Professional Self-Esteem Scale (Carmel, 1997) is an 8-item scale originally designed for physicians. The items tap their appraisal of their professional competence, for example, "Generally I am sure that my professional knowledge and skills

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

are on a very high level." Responses are indicated on a 7-point scale ranging from 1 (*not at all true for me*) to 7 (*very true for me*). The original Hebrew scale was found to be valid and reliable (Carmel, 1997). In the present study, Cronbach's alpha was .92. Each participant was thus assigned a professional self-esteem score equal to the average of his or her responses on all items, with higher scores indicating greater professional self-esteem.

A demographic questionnaire was used to acquire data regarding the respondent's age, years of experience, and exposure to the death of patients in the previous six months (number of patients directly treated by him/her who died during this period).

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Procedure

Medical personnel were approached by a social worker at team meetings or during the work day. The goals of the study were explained to them, and confidentiality and anonymity were guaranteed. One hundred and twenty-four staff members gave their informed consent to participate in the study. They completed the set of self-report questionnaires tapping optimism, professional self-esteem, secondary traumatization, personal growth, meaning in life, and background data, in that order. The set of questionnaires was written and administrated in Hebrew, using either translated questionnaires, or original Hebrew questionnaires.

Results

Data analysis was conducted in three stages. The first stage examined differences between physicians and nurses on all variables; the second examined the associations in each of these groups between the dependent variables and the independent and background variables. In the third stage of analysis, hierarchical regressions were conducted to identify the factors that might predict personal growth and meaning in life among the health care professionals in the sample.

First, a series of *t* tests for profession were conducted for all the study variables. The means and standard deviations appear in Table 1. The results in Table 1 reveal significant differences between the groups, with nurses reporting higher professional

TABLE 1 Means and Standard Deviations of the Study Variables by Group ($n = 211$)

	Physicians ($n = 58$)		Nurses ($n = 66$)		
Variable	*M*	*SD*	*M*	*SD*	*t* (122)
Optimism	2.72	.61	2.77	.49	.47
Professional self-esteem	5.36	1.01	5.83	.89	2.75**
Secondary traumatization	.74	.39	.97	.57	2.62**
Meaning in life	5.63	.63	5.55	.70	.65
Personal growth	2.58	.68	3.17	.71	4.70***

**$p < .01$. ***$p < .001$.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

self-esteem, secondary traumatization, and personal growth than physicians.

In examination of the differences between physicians and nurses on the five growth factors (new possibilities, relationships with others, personal strength, appreciation to life, spiritual change), a series of *t* tests revealed significant differences between the groups on all the factors, with nurses reporting higher personal growth than physicians.

Next, Pearson correlations were calculated for each of the two groups between the dependent variables (personal growth and meaning in life) and each of the independent variables (professional self-esteem, optimism, and secondary traumatization) and background variables (age, professional experience, exposure to patient death). The results are displayed in Table 2. As can be seen from Table 2, among physicians, higher meaning in life was associated with greater exposure to patient death, higher optimism and professional self-esteem, and lower level of secondary traumatization. Higher personal growth correlated significantly only with higher professional self-esteem. Among nurses, higher meaning in life was associated with higher age, optimism, and professional self-esteem, and lower level of secondary traumatization. Higher personal growth was not found to correlate significantly with any of the study variables. Fisher's *Z* indicated that none of the differences between physicians and nurses was significant.

Importantly, the correlation between personal growth and meaning in life was not significant for physicians ($r = .22$,

TABLE 2 Pearson Correlations Between Independent and Dependent Variables by Profession

Variable	Physicians' meaning in life	Personal growth	Nurses' meaning in life	Personal growth
Age	.17	.12	.29*	.01
Professional experience	.22	.14	.20	.01
Exposure to patient deaths during previous 6 months (number of patients)	.40**	.15	.20	−.17
Optimism	.58***	.11	.57***	.21
Professional self-esteem	.67***	.33**	.48***	.17
Secondary traumatization	−.37**	.18	−.42***	.04

*$p < .05$. **$p < .01$. ***$p < .001$.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

$p > .05$) and significant but low for nurses ($r = .35$, $p < .01$), indicating that these two variables as a whole are conceptually different. In a similar way, low correlations were found between meaning in life and each of the five growth factors among physicians ($r = .28$, $p < .05$ for meaning in life and personal strength), and among nurses ($r = .32$, .42, .28, $p < .05$, for meaning in life and new possibilities, personal strength and appreciation to life, respectively).

Pearson correlations were also calculated for each of the two groups between the five growth factors and each of the independent variables and background variables. The results are displayed in Table 3.

As can be seen from Table 3, among physicians, higher personal strength was associated with higher professional self-esteem, and higher appreciation of life was associated with greater exposure to patient death, higher professional self-esteem, and higher level of secondary traumatization. Among nurses, higher personal strength was associated with higher professional self-esteem, and higher spiritual change was associated with lower number of patient death. Fisher's Z indicated that none of the differences between physicians and nurses was significant.

In the third stage of the analysis, two hierarchical regressions were conducted to examine the unique and combined contribution of the study variables to the explained variance of personal growth

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

TABLE 3 Pearson Correlations between Independent Variables and Factors of Personal Growth by Profession

	Physicians					Nurses				
Variables	New possibilities	Relating to others	Personal strength	Appreciation to life	Spiritual change	New possibilities	Relating to others	Personal strength	Appreciation to life	Spiritual change
Age	.05	.06	.09	.16	.20	−.04	−.08	.25	.01	−.08
Professional experience	.05	.09	.05	.19	.26	−.01	−.12	.22	.02	−.05
Exposure to patient deaths during previous 6 months (number of patients)	.09	.10	.09	.34*	−.10	−.12	−.10	−.08	−.16	−.28*
Optimism	.03	.16	.06	.06	.09	.19	.20	.21	.16	.07
Professional self-esteem	.20	.24	.48***	.32*	−.02	.12	.09	.32**	.13	.08
Secondary traumatization	.17	.11	−.06	.29*	.13	.03	.10	−.24	.09	.12

*$p < .05$. **$p < .01$. ***$p < .001$.

and meaning in life. The variables were entered in the following order: the demographic variables of profession (a dummy variable comparing physicians and nurses), age, years of experience, and number of patient deaths in the previous year in Step 1; the personal resources of optimism and professional self-esteem in Step 2; and secondary traumatization in Step 3. These variables were all entered in a forced order. The interactions between the independent variables were then entered in Step 4 using a stepwise method, so that only interactions that proved to make a significant contribution to the dependent variables were included in the analysis. The results appear in Table 4.

As Table 4 indicates, the independent variables were found to explain 31% of the variance of personal growth. The background variables accounted for 13% of the variance, with nurses reporting higher growth. The personal resources in Step 2 added a further 10% to the explained variance, indicating that the higher the participant's professional self-esteem, the more personal growth he or she experienced. Entering the secondary traumatization score in Step 3 added 3% to the explained variance, showing higher traumatization to be associated with higher personal growth. In the last step, the interaction between secondary traumatization and professional self-esteem accounted for an additional 5% of the variance in personal growth. Examination of the source of this interaction revealed that higher level of secondary traumatization was associated significantly and positively with higher personal growth only among low (below the median of 5.75) professional self-esteem individuals, $r = .32$, $p < .01$. This correlation was not significant among those higher (over 5.76) on professional self-esteem, $r = -.09$, $p > .05$.

In respect to meaning in life, the independent variables were found to explain 46% of the variance. The background variables accounted for 11% of the variance, with higher number of patient deaths predicting higher reported meaning in life. The personal resources in Step 2 added a significant 32% to the explained variance, indicating that the higher the participant's optimism and professional self-esteem, the more he or she perceived meaning in life. Entering the secondary traumatization score in Step 3 added a further 3% to the explained variance, with lower traumatization associated with higher meaning in life. No significant interactions were found in this analysis.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

TABLE 4 Contributions of the Background and Independent Variables to Meaning in Life and Personal Growth: Regression Coefficients, Standard Errors, and Significance Tests

	Meaning in life					Personal growth				
Effect	B	SE B	β	*t*	ΔR^2	B	SE B	β	*t*	ΔR^2
Step 1					.11**					.13**
Age	.24	.17	.36	1.36		1.98	3.98	.13	.50	
Professional experience	−.09	.17	−.14	.57		−2.14	3.81	−.14	.56	
Profession	.03	.16	.02	.20		11.40	3.53	.38	3.23**	
Number of patient deaths during previous six months	.04	.02	.21	2.26*		−.27	.39	−.07	.70	
Step 2					.32***					.10**
Optimism	.27	.06	.42	4.83***		.74	1.53	.05	.48	
Professional self-esteem	.22	.07	.32	3.30***		5.57	1.81	.35	3.09**	
Step 3					.03*					.03*
Secondary traumatization	−.11	.05	−.17	1.98*		2.84	1.42	.20	2.00*	
Step 4										.05*
Secondary traumatization X Professional self-esteem						−2.59	.99	−.23	2.63**	

*$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

Working with the terminally ill is a highly intense experience in which the medical staff must contend not only with the distress of the patients and their loved ones, but with their own responses as well. When the patients are children suffering from malignant or chronic disease, the circumstances are much more stressful. Indeed, studies of medical personnel have shown that the daily exposure to death and dying may produce secondary traumatization, adversely affecting their mental and physical health (Gustavsson & MacEachron, 2002; McCue, 1982). Recent theoretical developments, however, suggest that it may also have positive implications for health care professionals. The current study sought to examine two such positive outcomes, personal growth and meaning in life, and to identify the factors that may predict them, including the personal resources of optimism and professional self-esteem, the level of exposure to patient death, and the level of secondary traumatization.

As hypothesized, it was found that greater exposure to death significantly predicted the sense of meaning in life. Contrary to expectations, however, the same association was not found for personal growth. Our hypotheses regarding the personal resources were also confirmed in part: as hypothesized, professional self-esteem predicted both personal growth and meaning in life, but greater optimism was associated only with a higher sense of meaning in life.

The findings for professional self-esteem are in line with the study by Carmel (1997) in which this variable was found to counteract the negative effects of physicians' stressful work demands, leading to higher work satisfaction and lower burnout. The current study extends these results to include the additional benefits of personal growth and enhanced meaning in life, as well as expanding the findings to nurses as well as physicians. Our study also conforms with that of Noonan and Tennstedt (1997), who found a positive correlation between caregiving and the sense of self-esteem and meaning in life.

The association found here between optimism and meaning in life is consistent with the results of numerous studies conducted on diverse populations, such as patients who have undergone bypass surgery, women who have miscarried, people diagnosed with

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

cancer, and caregivers of stroke victims (Carver et al., 1993; Cozzarelli, 1993; Scheier et al., 1989; Tompkins, Schulz, & Rau, 1988). All these investigations yielded an association between dispositional optimism on the one hand, and adaptation and the tendency to find benefits in the need to cope with stressful events on the other. Moreover, our results are in line with previous findings showing that caregivers who were more optimistic displayed greater ability to cope with stressors than those who were less optimistic by nature (Tompkins et al., 1988).

The question arises as to why dispositional optimism was found here to be associated with meaning in life but not with personal growth. The answer may lie in Frankl's (1985) claim that one can find meaning in life through doing. A more optimistic outlook may therefore enable health care professionals to derive meaning in life from their choice of job, work which entails a daily encounter with death. On the other hand, the theory of growth through adversity holds that in order to exhibit personal growth, the individual must first acknowledge the crisis he is or is undergoing and experience its full intensity (Tedeschi & Calhoun, 1995). It is possible that people who are more optimistic experience the crisis as less powerful and thus display less personal growth.

Support for this explanation can be found in the study by Spielman and Taubman–Ben-Ari (2007), which showed that the parents of full-term infants reported less personal growth than the parents of pre-terms. The authors suggest that the low level of personal growth in the former group can be explained by the absence of a legitimate sense of crisis following the birth of a full-term infant. In other words, the crucial factor in generating growth in the wake of adversity may be the perception of the event, which itself may be affected by the individual's personal resources (Janoff-Bulman, 2000; Tedeschi & Calhoun, 2004). Further support for this possibility can be found in the fact that secondary traumatization was associated with personal growth in our study primarily among participants low on professional self-esteem, that is, those who can be expected to experience a greater sense of crisis.

The finding that secondary traumatization contributed positively to personal growth and negatively to meaning in life seems to suggest a basic difference between these two variables. Whereas the search for meaning continues throughout the course of life,

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

personal growth, as noted above, occurs in the wake of a stressful event that is perceived as such by the individual (Tedeschi & Calhoun, 1995). Nevertheless, the level of exposure to patient deaths was not found to predict the personal growth of the medical staff. Thus difficult though it may be, working with trauma victims per se would appear to stimulate and enrich the professional. In other words, the encounter with death and dying in and of itself may lead to growth, irrespective of the number of cases involved.

Another possible explanation for this finding may lie in the nature of the staff itself. The personnel used in wards with higher mortality rates may already have made a choice that accords with their personality traits. People tend to choose a profession that will enable them to satisfy their major needs and desires (Bordin, 1974). Thus those who elect to work in an environment that routinely confronts them with death are likely to display suitable qualities and coping strategies. Consequently, they may not perceive the work setting as overly stressful and therefore do not experience greater growth. This notion is in line with the current finding of very low levels of secondary traumatization among the medical staff.

Although no specific hypotheses were formulated regarding the differences between physicians and nurses, nurses were found to report higher levels of professional self-esteem, secondary traumatization, and personal growth. Although it is difficult to compare the self-esteem of members of two distinct professions, the difference in the character of their work may account for the findings relating to secondary traumatization and personal growth. Nursing involves much closer contact with patients and more intimate involvement in their physical, physiological, and mental needs. Furthermore, nurses spend more time with their patients, devoting their entire shift to their care, whereas doctors meet with them for shorter periods of time during their daily rounds. This difference in their work routine may explain why nurses report both greater secondary traumatization and more personal growth.

No difference emerged between physicians and nurses, however, for meaning in life. This is an intriguing finding. Although the higher level of secondary traumatization reported by nurses, which seems to be an indication that they find it harder to cope with the challenges of their job, may offer them an opportunity for personal growth, it might not affect their meaning in life.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Further investigation is needed to identify factors that might moderate the work-related stress of nurses and promote their experience of both growth and meaning in life.

Also worth discussing briefly are the associations between the independent variables and the five growth factors. Whereas only professional self-esteem was found to be associated with the total personal growth score among physicians, when examining the different growth factors, we found that higher professional self-esteem was associated with higher perception of spiritual change, and that higher number of deaths, greater secondary traumatization, and professional self-esteem were all associated to appreciation of life, and that professional self-esteem was related to report of higher personal strength. Thus, it seems that first, the current study's independent variables were mostly relevant to the particular aspect of personal growth which relates to the acknowledgment of how precious life is. Second, interestingly, whereas greater secondary traumatization was associated with higher appreciation of life, it was related to lower level of meaning in life. This different association may warrant further examination, but surely points to the different conceptual components of meaning in life and growth, though both may be considered as indicators of positive consequences of coping with life transitions and crises.

Relating to nurses, whereas none of the independent variables was found to be associated with the total score of personal growth, professional self-esteem was found to be associated with the perception of personal strength, whereas exposure to patients' death was negatively associated with spiritual change. In other words, the lower the number of patients who died, the higher the report of a spiritual growth. Once again, professional self-esteem seems to present itself as a potentially precious resource, which may help to mitigate consequences of exposure to hardships.

Several limitations of this study should be noted. First, it relies exclusively on self-reports and thus might suffer from a social desirability bias. Moreover, the variable of exposure to patients' death relied on the number of recalled deaths of patients in the previous six months. This number might also reflect the number of patients treated, thus indirectly measure also the general level of stress, and potential for burnout, which can in turn affect the number recalled as a function of the distress level of the respondent. It might be useful in future studies to relate not

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

only to the proportion of the number of patients who died, but also to the number of patients who have been successfully treated or saved by the respondents. In addition, different qualities of the deaths can be taken into account, such as whether it was expected or unexpected, how horrible it was for the patients and their families, and so on. Secondly, meaning in life and personal growth were measured at only one point in time. Future studies would benefit from longitudinal designs or a comparison of members of the medical staff in the early stages of their career with more experienced personnel to achieve a better understanding of the dynamics of these positive outcomes along the "work cycle." Finally, the sample used here was relatively small, and the nurses' sample consisted mainly of women, which may limit the potential generalizability of the results. Future studies might replicate the present one in larger samples and different sociocultural contexts, balancing better between different background variables.

Nevertheless, we believe this study makes several important contributions to the existing literature. First, most of the previous investigations of positive responses to adversity examined people coping directly with stressful events (Davis et al., 1998). Only few have considered caregivers such as family members (Noonan & Tennstedt, 1997) or professionals such as psychotherapists (Arnold et al., 2005). To the best of our knowledge, the current study is the first to examine the hospital medical staff in general, and those working with children in particular. Secondly, although dispositional optimism has been studied in various populations in relation to personal growth, these too have not included medical personnel. In addition, previous studies of professional self-esteem among health professionals have not considered the outcomes of personal growth and meaning in life, nor have they been conducted on nurses. Finally, our results are the first indication of a complex association between secondary traumatization and different types of positive outcomes, an aspect of this issue that warrants further investigation.

Future studies might also focus on additional personal resources, such as global self-esteem, self-efficacy, or sense of coherence, as well as additional positive outcomes, including subjective well-being and quality of life on the personal level, or empathy and interpersonal relations on the social level. Furthermore, it

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

would be interesting to examine these variables among the medical staff working with other populations, such as older patients.

Understanding the emotional responses of medical personnel who are routinely exposed to the death of their patients might make it possible to help them derive secondary benefits from their work. Our study suggests that a high level of professional self-esteem is an important factor in filtering out the threatening aspects of their work. Fostering this quality might therefore be the first step in assisting these people to cope more successfully with their demanding and potentially stressful jobs.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders: DSM-IV*. Washington, DC: Author.

Arnold, D., Calhoun, L. G., Tedeschi, R., & Cann, A. (2005). Vicarious posttraumatic growth in psychotherapy. *Journal of Humanistic Psychology*, *45*, 239–263.

Bernstein, J. (2000). The professional self-evaluation of immigrant physicians from the former Soviet Union in Israel. *Journal of Immigrant Health*, *2*, 183–190.

Blascovich, J. & Tomaka, J. (1991). Measures of self-esteem. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychology attitudes* (pp. 115–160). San Diego, CA: Academic Press.

Bordin, E. S. (1974). An articulated framework for vocational development. *Journal of Counseling Psychology*, *10*, 107–116.

Brady, J. L., Guy, J. D., Poelstra, P. L., & Brokaw, B. F. (1999). Vicarious traumatization, spirituality, and the treatment of sexual abuse survivors: A national survey of women psychotherapists. *Professional Psychology: Research and Practice*, *30*, 386–393.

Calhoun, L. G. & Tedeschi, R. (1999). Issues for clinicians. In L. G. Calhoun (Ed.), *Facilitating posttraumatic growth* (pp. 125–141). London: Lawrence Erlbaum Associates.

Carmel, S. (1997). The professional self-esteem of physicians scale, structure, properties and the relationship to work outcomes and life satisfaction. *Psychological Reports*, *80*, 591–602.

Carver, C. & Antoni, M. (2004). Finding benefit in breast cancer during the year after diagnosis predicts better adjustment 5 to 8 years after diagnosis. *Health Psychology*, *23*, 595–598.

Carver, C. S., Pozo, C., Harris, S. D., Noriega, V., Scheier, M. F., Robinson, D. S., Ketcham, A. S., Moffat, F. L., & Clark, K. C. (1993). How coping mediates the effect of optimism on distress: A study of women with early stage breast cancer. *Journal of Personality and Social Psychology*, *65*, 375–390.

Carver, C. S. & Scheier, M. F. (2001). Optimism, pessimism, and self-regulation. In E. Chang (Ed.), *Optimism and pessimism: Implications for theory, research and practice* (pp. 31–52). Washington, DC: American Psychological Association.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Chang, E. C. (1998). Dispositional optimism and primary and secondary appraisal of a stressor: Controlling for confounding influences and relations to coping and psychological and physical adjustment. *Journal of Personality and Social Psychology*, *74*, 1109–1120.

Cohen, C. A., Colantonio, A., & Vernich, L. (2002). Positive aspects of caregiving: Rounding over the caregiver. *International Journal of Geriatric Psychiatry*, *17*, 184–188.

Coopersmith, S. (1967). *The antecedents of self-esteem.* San Francisco: W.H. Freeman & Company.

Cozzarelli, C. (1993). Personality and self-efficacy as predictors of coping with abortion. *Journal of Personality and Social Psychology*, *65*, 1224–1236.

Crumbaugh, J. C. & Maholick, L. T. (1969). *Manual of instruction for the purpose in life test.* Munster, IN: Psychometric Affiliates.

Danieli, Y. (1994). Countertransference, trauma, and training. In J. P. Wilson & J. D. Lindy (Eds.), *Countertransference in the treatment of PTSD* (pp. 368–388). New York: Guilford.

Davis, C. G., Nolen-Hoeksema, S., & Larson, J. (1998). Making sense of loss and benefiting from the experience: Two construals of meaning. *Journal of Personality and Social Psychology*, *75*, 561–574.

Escot, C., Artero, S., Gandubert, C., Boulenger, J. P., & Ritchie, K. (2001). Stress levels in nursing staff working in oncology. *Stress and Health*, *17*, 273–279.

Farran, C. J., Miller, B. H., Kaufman, J. E., Donner, E., & Fogg, L. (1999). Finding meaning through caregiving: Development of an instrument for family caregivers of persons with Alzheimer's disease. *Journal of Clinical Psychology*, *55*, 1107–1125.

Figley, C. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 1–20). New York: Brunner/Mazel.

Firth-Cozens, J., Midgley, S. J., & Burges, C. (1999) Questionnaire survey of post-traumatic stress disorder in doctors involved in Omaha bombing. *British Medical Journal*, *319*, 1609–1609.

Fitts, W. H. (1972). *The self concept and performance.* Nashville, TN: Dede Wallace Center Monograph, No. 5.

Frankl, E. V. (1985). *Man's search for meaning.* New York: Washington Square Press.

Frankl, E. V. (1988). *The will to meaning: Foundations and applications of logotherapy.* New York: Meridian.

Gabriel, M. A. (1994). Group therapists and AIDS groups: An exploration of traumatic stress reactions. *GROUP*, *18*, 167–176.

Gustavsson, N. & MacEachron, A. E. (2002). Death and the child welfare worker. *Children and Youth Services Review*, *20*, 903–915.

Haley, A. S. (1974). When the patient reports atrocities. *Archives of General Psychiatry*, *31*, 191–196.

Hodgkinson, P. & Shepherd, M. (1994). The impact of disaster support work. *Journal of Traumatic Stress*, *7*, 587–600.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Holland, J. M. & Neimeyer, R. A. (2005). Reducing the risk of burnout in end-of-life care settings: The role of daily spiritual experiences and training. *Palliative and Supportive Care*, *3*, 173–181.

Isikhan, V., Comez, T., & Danis, M. Z. (2004). Job stress and coping strategies in health care professionals working with cancer patients. *European Oncology Nursing Society*, *8*, 234–244.

Janoff-Bulman, R. (2000). The other side of trauma: Towards a psychology of appreciation. In J. H. Harvey & E. D. Miller (Eds.), *Loss and trauma: General and close relationship perspectives* (pp. 29–44). Philadelphia: Brunner-Routledge.

Janoff-Bulman, R. & Yopyk, D. J. (2004). Random outcomes and valued commitments. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 122–140). New York: Guilford.

McCue, J. D. (1982). The effects of stress on physicians and their medical practice. *New England Journal of Medicine*, *306*, 458–463.

Mills, L. D. & Mills, T. J. (2005). Symptoms of post-traumatic stress disorder among emergency medicine residents. *The Journal of Emergency Medicine*, *28*, 1–4.

Motta, R. W., Kefer, J. M., Hertz, M. D., & Hafeez, S. (1999). Initial evaluation of the secondary trauma questionnaires. *Psychological Reports*, *85*, 997–1002.

Motta, R. W., Newman, C. A., Lombardo, K. L., & Silverman, M. A. (2004). Objective assessment of secondary trauma. *International Journal of Emergency Mental Health*, *6*, 67–74.

Noonan, A. E. & Tennstedt, S. L. (1997). Meaning in caregiving and its contribution to caregiver well-being. *The Gerontologist*, *37*, 785–795.

Pearlman, L. A. & MacIan, P. S. (1995). Vicarious traumatization—an empirical study of the effects of trauma work on trauma therapists. *Professional Psychology: Research and Practice*, *26*, 558–565.

Pearlman, L. A. & Saakvitne, K. W. (1995). *Trauma and the therapist: Countertransference and vicarious traumatization in psychotherapy with incest survivors*. London: W.W. Norton.

Rashotte, J., Fothergill-Bourbonnais, F., & Chamberlain, M. (1997). Pediatric intensive care nurses and their grief experiences: A phenomenological study. *Heart & Lung: The Journal of Critical Care*, *26*, 372–386.

Reker, G. T. & Wong, P. T. P. (1988). Aging as an individual process: Towards a theory of personal meaning. In J. E. Birren & V. L. Bengston (Eds.), *Emerging theories of aging* (pp. 214–246). New York: Springer.

Rhoades, D. R. & McFarland, K. F. (2000). Purpose in life and self-actualization in agency-supported caregivers. *Community Mental Health Journal*, *36*, 513.

Rosenberg, M. (1979). *Convincing the self*. New York: Basic Books.

Sabin-Farrell, R. & Turpin, G. (2003). Vicarious traumatization: Implications for the mental health of health workers. *Clinical Psychology Review*, *23*, 449–480.

Schaefer, J. A. & Moos, R. H. (1992). Life crises and personal growth. In B. N. Carpenter (Ed.), *Personal coping: Theory, research, and application* (pp. 149–170). Wesport, CT: Praeger.

Schauben, L. J. & Frazier, P. A. (1995). Vicarious trauma: The effect on female counselors of working with sexual violence victims. *Psychology of Women Quarterly*, *19*, 49–64.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010

Scheier, M. F. & Carver, C. S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research*, *16*, 201–228.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A revaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, *67*, 1063–1078.

Scheier, M. F, Matthews, K. A., Owens, J. F., Magovern, G. J., Lefebvre, R. C., Abbott, R. A., & Carver, C. S. (1989). Dispositional optimism and recovery from coronary bypass surgery: The beneficial effects on physical and psychological well-being. *Journal of Personality and Social Psychology*, *57*, 1024–1040.

Seligman, M. E. P. & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*, 5–14.

Spielman, V. & Taubman–Ben-Ari, O. (2007). Parental self-efficacy and personal growth in the transition to parenthood: A comparison between parents of premature and of full-term babies. Manuscript under review.

Tedeschi, R. G. & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.

Tedeschi, R. G. & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*, 455–471.

Tedeschi, R. G. & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, *15*, 1–18.

Tompkins, C. A., Schulz, R., & Rau, M. T. (1988). Post-stroke depression in primary support persons: Predicting those at risk. *Journal of Consulting and Clinical Psychology*, *56*, 502–508.

Wong, P. T. P. (1998). Implicit theories of meaningful life and the development of the personal meaning profile. In P. T. P. Wong & P. S. Fry (Eds.), *The human quest for meaning: A handbook of psychological research and clinical applications* (pp. 111–140). Mahwah, NJ: Lawrence Erlbaum Associates.

Downloaded By: [Tel Aviv University] At: 19:29 15 March 2010