Predictors of Professional Quality of Life among Physicians in a Conflict Setting: The Role of Risk and Protective Factors

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ABSTRACT

Background: Unlike other places in the western world, Israeli physicians are prone to be exposed to victims of terror and war (soldiers and civilians alike), while in some cases the patients are close friends or relatives. Moreover, in other armed conflict situations (stemming from war or terror), there is a direct threat to the physician's life and his/her family. Among hospital personnel, there is little research concerning the factors associated with aspects of professional quality of life such as burnout, compassion fatigue, and compassion satisfaction.

Aim: The current study compared a set of risk and protective factors associated with burnout, compassion fatigue, and compassion satisfaction.

Methods: The sample consisted of 97 physicians who answered a wide battery of questionnaires tapping to the aforementioned factors that served as predictive variables (age, gender, marital status, PTSD symptoms, depressive symptoms, dissociative symptoms, life satisfaction, perceived self-efficacy, perceived family support) using multiple regressions.

Results: The study results showed that higher levels of PTSD symptoms were associated with higher levels of compassion fatigue ($\beta = .594$; $t = 4.419$; $p < .001$). A higher level of life satisfaction was associated with lower burnout ($\beta = -.436$; $t = -4.293$; $p < .001$). The same results were found also in lower level of perceived family support ($\beta = -.203$; $t = -2.533$; $p < .05$), and higher level of perceived self-efficacy was associated with higher burnout ($\beta = .298$; $t = 2.702$; $p < .01$). Finally, a higher level of life satisfaction was associated with higher compassion satisfaction ($\beta = .493$; $t = 4.419$; $p < .001$).

Conclusion: These results may suggest that life satisfaction is a predictor associated with burnout and compassion satisfaction. These results are viewed in light of the importance of life satisfaction as a barrier against burnout and its implication for physicians and hospital policy.

INTRODUCTION

Over the past 20 years, the Israeli population has been exposed to many traumatic events, mainly due to war and terror (1). This exposure has led to a mental health toll that has affected Israeli society (2). One particular group that has been in constant exposure to the casualties of war and terror is hospital physicians (3). Israeli physicians have dealt with extreme terror waves during 1993-1995, 2002-2003 (2), and during the Second Lebanon War in 2006 (3, 4), in which they treated civilians and soldiers while under the stress of caring for their own family

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members, who were exposed to missile attacks. The situation was similar during the Gaza War in 2008-2009 (5).

A recent review has found that job stress and burnout are positively associated with likelihood of committing errors in medical decisions and with suboptimal patient care (6). Moreover, job stress has been found to be related to a greater influence of non-medical factors in making medical decisions (7). While stress is common among hospital personnel due to their work, medical staff seem to deny the effect of stress and fatigue on performance (8). As the literature shows, hospital personnel have been found to be relatively resilient to potential trauma, both direct and indirect (9-13). However, they face heavy workloads, occupational stress, ethical dilemmas, and conflicting demands as part of their everyday life (14, 15). These may result in psychological stress, psychosomatic symptoms and psychiatric morbidity (3, 4, 9, 16). In the context of exposure, hospital personnel are constantly exposed to secondary traumatization as part of their daily work as well as during extreme conditions like wartime situations (1). Beyond the mentioned potential primary traumatization, the potential for secondary traumatization also exists. Within this context, the study of professional quality of life among physicians is quite scarce. The purpose of the present study was to investigate professional quality of life and its related concepts in a population of physicians. Looking from an Israeli perspective, the context in which physicians operate is much more stressful in comparison to their western counterparts. In sum, the Israeli context gives us a unique setting in which hospital personnel are exposed to ongoing stress as part of their job and extreme stress for particular periods in which their own lives are at stake. This distinctive situation makes the Israeli physicians population a highly selected and important study group within the field of traumatic stress.

COMPASSION FATIGUE

Compassion Fatigue (CF), also known as Secondary Trauma (ST) and related to Vicarious Trauma (VT), addresses work related secondary exposure to extremely stressful events (17). It is the stress resulting from helping or wanting to help a traumatized or suffering person (18). The different formulations developed to explain secondary traumatization tend to emphasize one of two major aspects. The first, more commonly referred to as Vicarious Traumatization, regards a latent alteration to cognitive schemes and basic beliefs that result from an empathic relationship with a trauma survivor (19-22). The second aspect refers to symptoms a person experiences as a result of having been in contact (therapeutic or other) with a trauma survivor. These aspects partially overlap and may exist simultaneously (19, 23). In many cases, and especially among healthcare professionals, it is impossible to distinguish between direct and indirect traumatic effects. Empirically, CF was associated with the following factors: social support (24), previous trauma history (25, 26), perceived self-efficacy (27), depression (28), and life satisfaction (29).

BURNOUT

Burnout is a condition that is present in many individuals under constant pressure.

One of the most affected groups is physicians, as they are frequently overloaded with the demands of caring for sick patients within limited organizational resources (30, 31). Factors that were found associated with lower burnout are the existence of a supportive spouse, high social support, personal expectations, life satisfaction, and low level of depressive symptoms (30, 31). It was found that stressed, burned out, and dissatisfied physicians report a greater likelihood of making errors and more frequent instance of suboptimal patient care (6). In a study conducted among American surgeons (32), results showed that major medical errors reported by surgeons were strongly related to a surgeon's degree of burnout and their quality of life (QOL).

COMPASSION SATISFACTION

Alongside the negative effects of working with trauma patients, being able to do your job well, whether it is helping others or any other form of contribution, provides a sense of satisfaction. Stamm (17) refers to this as Compassion Satisfaction (CS). A study by Rout, Cooper and Rout (33) found that the intensity of job demands related to patient-contacts, patients' expectations, and interruptions by patients have a negative impact on general practitioners (GPs) job satisfaction and mental health.

PROFESSIONAL QUALITY OF LIFE

Professional quality of life is a general construct suggested by Stamm (17) in order to depict three previously described components that affect professional's life from the field of caring (varies from social workers to physicians). These are viewed as negative and positive aspects of caring. Although the relationships between the three components – compassion fatigue, burnout and compassion satisfaction – is not yet fully understood (17), it seems that the trio can represent all major aspects of

professional quality of life as it is affected by and affects professional well-being and performance.

As addressed earlier, the separation of direct and indirect traumatic exposure among physicians is understudied. Understanding how risk and protective factors interact among hospital professionals is of great importance, as it can help in formulating customized medical policies and programs that would assist utilization of personnel resources and prevent the adverse effects of the negative components of professional quality of life (e.g., compassion fatigue and burnout).

RISK FACTORS & PROTECTIVE FACTORS ASSOCIATED WITH PROFESSIONAL QUALITY OF LIFE AND ITS COMPONENTS

The literature has addressed several risk and protective factors that are associated with the components of professional quality of life (compassion fatigue, burnout, compassion satisfaction). Within this context, the first risk factor is posttraumatic stress disorder (PTSD) symptoms, as this is an important indication of primary trauma. Among medical personnel (ambulance workers and paramedics), there was a moderate correlation between CF and PTSD symptoms, indicating that they are distinctive constructs (34). The second risk factor was depressive symptoms that are known to be associated with burnout (35). This is important as burnout is most likely to be accompanied by depression (36). The third risk factor was dissociation that was found to be related to vicarious traumatization among therapists (37, 38).

In terms of protective factors, life satisfaction is an important construct known to be associated with lower levels of burnout (26, 36, 39). It was also found to be a good indicator of global well-being and an indicator of positive mental health (40). Other important factors are perceived self-efficacy that was found to be associated with lower burnout (27, 41), and perceived family support that was also found to be negatively associated with burnout (42).

The present study aimed to investigate whether certain risk and protective factors are associated with physician professional quality of life components.

Based on previous literature, we devised four hypotheses. First, risk factors (PTSD symptoms, depressive symptoms, dissociative symptoms) will be associated with negative aspects of professional quality of life (compassion fatigue and burnout). Second, higher level of life satisfaction will be associated with lower levels of burnout and compassion fatigue, and higher levels of compassion satisfaction. At first glance, it may seem as a tautological hypothesis. However, there are differences between the two constructs. Life satisfaction is a global construct while compassion satisfaction is a very specific one. If the correlation between the two is moderate, it may be concluded that the two constructs share some variance but still represent separate entities (43). Third, perceived self-efficacy will be associated with lower levels of burnout and compassion fatigue, and higher levels of compassion satisfaction. Fourth, perceived family support will be associated with lower levels burnout and compassion fatigue, and higher levels of compassion satisfaction.

METHOD

DESIGN

The study design was a cross-sectional convenience sample of hospital physicians.

PARTICIPANTS

The sample consisted of 97 physicians. The mean age in the sample was 35.07 (SD = 9.08; range = 25-65), 82 men (84.5%), 62 married (63.9%). The study was approved by the Helsinki Institutional Review Board in Sourasky Medical Center, Rabin Medical Center, and Sheba Medical Center.

INSTRUMENTS DEMOGRAPHICS

Each participant was interviewed for background characteristics (age, gender, marital status, profession). The following demographic variables were coded as following: gender (1 = men; 2= women), marital status (1 = married; 2 = not married). For more demographic information and the study variables, see Table 1.

Table 1. *Descriptive Statistics for the Study Sample (n=97)*

Variables	
Demographics	
Age, years (SD)	35.07 (9.08)
Gender, Men, N (%)	82 (84.5)
Marital status, Married, N (%)	62 (63.9)
Risk Factors	
PTSD symptoms (IES-R), mean (SD)	10.27 (12.03)
Depressive symptoms (CES-D), mean (SD)	13.96 (6.82)
Dissociative symptoms (DES), mean (SD)	1.71 (1.54)
Protective Factors	
Life satisfaction (SAS), mean (SD)	7.30 (1.40)
Perceived self-efficacy, mean (SD)	3.53 (1.61)
Perceived family support, mean (SD)	2.71 (1.68)
Professional Quality of Life	
Compassion fatigue, mean (SD)	8.55 (6.29)
Burnout, mean (SD)	17.16 (5.07)
Compassion satisfaction, mean (SD)	33.16 (7.83)

INDEPENDENT VARIABLES - RISK FACTORS

PTSD symptoms were assessed by the Impact of Event Scale – Revised (IES-R)(44). The IES-R is a 22-item self-report measure that assesses subjective distress caused by traumatic events. The IES-R contains items related to the symptoms of PTSD. Items correspond directly to 14 of the 17 DSM-IV symptoms of PTSD. Respondents were asked to identify a specific stressful life event and then indicate how much they were distressed or bothered during the past seven days by each difficulty listed. Items are rated on a 5-point scale ranging from 0 ("not at all") to 4 ("extremely"). The IES-R yields a total score (ranging from 0 to 88). Cronbach's Alpha for the IES-R in this study was 0.94.

Depressive symptoms were assessed by the Center for Epidemiologic Studies depression scale (CES-D) (45), which includes 20 items representing four subscales of depressive symptomatology (negative affect, positive affect, somatic symptoms, and interpersonal problems). Respondents were asked to rate each item on a Likert scale of 0–3 (0 = not at all, 1 = sometimes, 2 = most of the time and 3 = all the time) while referring to the past 7 days. The possible range for a CES-D score is between 0 and 60. Cronbach α for this sample was 0.79.

Dissociative symptoms were assessed by the Dissociative Experience Scale (DES) (46), which is used to rate dissociative experiences on an 11-point frequency scale (0 = never; 100 = always). The total score is the average of the 28 items' scores (score range 0–100). Cronbach α for this sample was 0.89.

PROTECTIVE FACTORS

Satisfaction with Life was measured by Cantril's Self Anchoring Scale (SAS) (47). Participants were presented with a vertical ladder of 11 rungs, where the top (number 10) and the bottom (number 0) represented the best and worst possible conditions of one's life, respectively. The participants were asked to indicate on which rung they believed that they stood at the present time.

Perceived Self Efficacy was assessed by the question: "How well do my personality characteristics help me cope with extreme situations?" on a five point Likert scale (1 = not at all, 2 = a little bit, 3 = moderately, 4 = much, 5 = very much). Similar single item measures for perceived self-efficacy are known in the literature (48).

Perceived Family support was assessed by the question: "How well does my family help me cope with extreme situations?" on a five point Likert scale (1 = not at all, 2 = a little bit, 3 = moderately, 4 = much, 5 = very much). Similar single item measures for perceived family support are known in the literature (49).

DEPENDENT VARIABLE

Professional quality of life was measured by the Professional Quality of Life Scale – Revised (ProQOL) (17) which is composed of three discrete subscales. The first subscale measures *burnout.* Higher scores on this subscale represent a greater risk for burnout. We used a shorter version of the burnout subscale representing hospital personnel issues. The second subscale measures *compassion fatigue*. Higher scores indicate greater levels of compassion fatigue. The third subscale measures *compassion satisfaction.* Higher scores on this subscale represent greater satisfaction. The ProQOL is a 30-item self-report measure in which respondents were instructed to indicate how frequently each item was experienced in the previous 30 days. Each item is anchored by a 6-item Likert scale (0 = never, to 5 = very often). Cronbach α for the subscales are reported as α=.85 for compassion fatigue, α = .73 for the modified burnout subscale, and α = .86 for compassion fatigue subscale. These results are similar to those reported earlier with a relatively lower reliability in the burnout subscale (.72 in the original sample devising the questionnaire) (17).

STATISTICAL METHODS

First, a preliminary correlation matrix was conducted in order to view the association between the study variables. Afterwards, three sets of hierarchical multiple regression were conducted, each one corresponding respectively to an outcome variable (burnout subscale, compassion fatigue subscale, compassion satisfaction). The hierarchical regressions had three steps. The first step consisted of socio-demographic variables (age, gender, martial status). The second step consisted of risk factors (PTSD symptoms, depressive symptoms, dissociative symptoms) and the third consisted of protective factors (life satisfaction, personal attributes, family support). A preliminary analysis was conducted for potential multicolinearity. Applying the rules used in the literature stating that tolerance of less than 0.20 and/or variance inflation factor (VIF) of 5 and above indicate a multicollinearity problem (50). The preliminary analysis of the hieratical regressions yielded tolerance ranging from 0.472-0.898 and VIF of 1.138-2.117. These results indicated that there was no multicollinearity problem.

RESULTS

Hypothesis 1 was partially confirmed as the correlation matrix revealed a positive association between PTSD symptoms and CF (r = .627; p < .001) and burnout (r = .389; p < .01). The same was true for depressive symptoms that were positively associated with CF (r = .339; p < .01) and burnout (r = .438; p < .001). However, dissociative symptoms were positively associated only with CF (r = .318; p < .01). See Table 2 for more details.

Looking at the hierarchical multiple regression, only PTSD symptoms were significantly associated with CF (β = .594; *t* = 4.419; p <.001). See Table 3 for more details.

Life satisfaction was negatively associated with burnout (r = -.497; p < .001). Moreover, this result becomes more salient when looking at the hierarchical multiple regression results. Only psychological factors were associated with burnout while mental health variables were not. To be specific, life satisfaction was negatively associated with burnout (β = -.436; *t* = -4.293; p <.001) along with perceived family support (β = -.203; *t* = -2.533; p <.05). However, contrary to our expectation, perceived self-efficacy was positively associated with burnout (β = .298; *t* = 2.702; p <.01). See Table 4 for more results.

Affirming our second hypothesis, life satisfaction was positively associated with CS (r = .463; p < .001) along with perceived family support (r = .224; p < .05). See Table 2 for more details. The results of the hierarchical multiple regression support the correlation matrix as life satisfaction was positively associated with higher compassion satisfaction (β = .493; *t* = 4.419; p <.001). See Table 5 for more details.

Hypothesis 3 was partially confirmed, as life satisfaction did not predicted compassion fatigue. However, life satisfaction predicted burnout (β = .436; *t* = -4.293; p <.001) and compassion satisfaction (β = .493; *t* = 4.419; p <.001).

In sum, the results partially supported Hypothesis 1-4. The most intriguing result was that mental health factors were not associated with burnout and that perceived self-efficacy was positively correlated with burnout.

Table 2. *Correlation Matrix of the Study Variables (n=97)*

	Compassion Fatigue Scale	Burnout Scale	Compassion Satisfaction Scale
Age	.011	-.194	.201
Gender	.163	-.021	.141
Marital status	.066	.119	-.071
PTSD symptoms	.627***	.389***	.036
Depressive symptoms	.339**	.438***	-.004
Dissociative symptoms	.318**	.140	.028
Life Satisfaction	-.207	-.497***	.463***
Perceived self-efficacy	-.033	.209	.140
Perceived family support	.045	-.040	.224*

*p< .05, **p<.01, ***p<.001

Table 3. *Hierarchical Multiple Regression Predicting Compassion Fatigue Among Physicians (n=97)*

	Step 1: Model R = .220; Model R^2 = .048			Step 2: Model R = .629; Model R^2 = .396 R^2 change = .348***		
Predictors	Standardized β (B[a])	T	R^2	Standardized β (B[a])	t	R^2
Age	-.026 (-.017)	-.219	<.01	-.179 (-.117)	-1.463	.032
Gender	.198 (3.341)	1.752	.04	.203 (3.434)	2.056*	.041
Marital status	.088 (1.139)	.748	<.01	.027 (.351)	.272	<.01
Risk Factors						
PTSD symptoms				.594 (.328)	4.363***	0.353
Depressive symptoms				-.084 (-.080)	-.656	<.01
Dissociative symptoms				-.010 (-.047)	-.089	<.01
Protective Factors						
Life Satisfaction				-.080 (-.354)	-.762	<.01
Perceived self-efficacy				-.125 (-.498)	-1.131	.016
Perceived family support				-.002 (-.007)	-.017	<.01

[a] = Unstandardized B.
Gender was coded as 0 = men; 1 = women;
Marital status was coded as 0 = married/cohabitation; 1 = not married/cohabitation
* p< .05; ** p<.01; ***p<.001

DISCUSSION

The present study aimed to explore the associations between various risk and protective factors and components of hospital personnel's professional quality of life, namely compassion fatigue, burnout, and compassion satisfaction.

Our first hypothesis was that lower mental health will be best associated with the negative aspects of professional quality of life (compassion fatigue and burnout), and it was partially affirmed. When examined independently, each of the three risk factors was indeed positively correlated to CF, and two (post-traumatic and depressive symptoms) were positively correlated to

Table 4. *Hierarchical Multiple Regression Predicting Burnout Among Hospital Personnel (n=97)*

	Step 1: Model R = .232; Model R^2 = .054			Step 2: Model R = .673; Model R^2 = .453 R^2 change = .399***		
Predictors	Standardized β (B^a)	T	R^2	Standardized β (B^a)	t	R^2
Age	-.208 (-.111)	-1.675	.04	-.116 (-0.62)	-.934	.01
Gender	.024 (.337)	.209	<.01	-.007 (-.092)	-.069	<.01
Marital status	.056 (.601)	.460	<.01	-.046 (-.491)	-.467	<.01
Risk Factors						
PTSD symptoms				.165 (.074)	1.324	.03
Depressive symptoms				.159 (.128)	1.241	.03
Dissociative symptoms				.017 (.056)	.161	<.01
Protective Factors						
Life Satisfaction				-.436 (-.1570)	-4.293***	.19
Perceived self-efficacy				.298 (.963)	2.702**	.09
Perceived family support				-.278 (-.861)	-2.533*	.08

[a] = Unstandardized B.
Gender was coded as 0 = men; 1 = women
Marital status was coded as 0 = married/cohabitation; 1 = not married/cohabitation
* p< .05; ** p<.01; ***p<.001

Table 5. *Hierarchical Multiple Regression Predicting Compassion Satisfaction Among Hospital Personnel (n=97)*

	Step 1: Model R = .223; Model R^2 = .050			Step 2: Model R = .547; Model R^2 = .299 R^2 change = .249**		
Predictors	Standardized β (B^a)	T	R^2	Standardized β (B^a)	t	R^2
Age	.179 (.153)	1.460	.02	.212 (.181)	1.676	.04
Gender	.123 (2.570)	1.073	.03	.055 (1.153)	.514	<.01
Marital status	.034 (.567)	.282	<.01	.072 (1.192)	.654	<.01
Risk Factors						
PTSD symptoms				.044 (.034)	.310	<.01
Depressive symptoms				.183 (.221)	1.278	.03
Dissociative symptoms				.013 (.061)	.100	<.01
Protective Factors						
Life Satisfaction				.493 (2.828)	4.419***	.24
Perceived self-efficacy				.064 (.324)	.526	<.01
Perceived family support				.141 (.674)	1.148	.02

[a] = Unstandardized B.
Gender was coded as 0 = men; 1 = women
Marital status was coded as 0 = married/cohabitation; 1 = not married/cohabitation
* p< .05, ** p<.01, *** p<.001

burnout. However, when taking into account their combined effect, only PTSD symptoms remained positively associated with CF. This suggests a complex model of interactions between the factors. Post-traumatic stress symptoms include, alongside trauma-specific symptoms, symptoms of a depressive nature and of a dissociative nature (e.g., 51). It may be that the association found in the combined model of PTSD and CF reflects the interaction between symptom clusters (dissociative, depressive and post-traumatic) and the complex primary and secondary traumatic exposure that exists in this population group. Similarly, Meadors and colleagues (52) revealed that among pediatric healthcare providers a significant overlap existed between the terms of posttraumatic stress disorder (PTSD), secondary traumatic stress (STS), compassion fatigue (CF), burnout (BO) and compassion satisfaction (CS).

Integrating hypotheses 2-4 which addressed a correlation between satisfaction with life, perceived self-efficacy and perceived family support and compassion fatigue, burnout and compassion satisfaction, these hypotheses were partially supported and show a distinct differentiation between life satisfaction and compassion satisfaction along with the negative association between life satisfaction and burnout. These findings suggest that compassion satisfaction might be one aspect of life satisfaction that is more related to health care providers who target themselves to fulfill their mission. In other words, physicians feel satisfaction from elements such as doing their work well, helping others, working with their colleagues, being able to contribute to society or feeling high competency. A similar result was found among 226 emergency physicians (53).

An interesting finding was that perceived self-efficacy was positively correlated to burnout. Greenglass et al. (54) have suggested that individual skills such as coping ability affect the degree of burnout experienced. In their study among nurses they revealed that nurses who utilized control coping (proactive efforts to change the situation), had more positive feelings about their professional accomplishments. Greenglass and Burke (55) also reported that escape coping (efforts to get the person away from the situation) was associated with higher levels of burnout, including more emotional exhaustion and cynicism. Escape coping appears to be another symptom of distress rather than a coping strategy as it is consistently associated with psychological symptomatology (56, 57).

Thus, one may assume that physicians who perceive themselves as using more control-oriented coping tactic rather than an avoidant or an escape-oriented coping tactic, will be able to cope more effectively with burnout. Finally, Spickard et al. (30) view family support as an important barrier against burnout.

LIMITATIONS

There are several limitations to this study. First, we used a convenience sample and consequently our respondents may not represent the population of hospital personnel. Second, Israeli citizens are chronically exposed to national security threats such as wars and terrorist bombings which indubitably, has an effect on coping capabilities. For the most part, studies have found a harmful effect of exposure to stress (e.g., 58), but there is also some evidence that traumatic exposure may have an immunizing effect (59, 60). Either way, Israeli hospital personnel are more likely to differ in their stress reactions from other hospital personnel worldwide who have experienced less exposure to direct and indirect traumatic events.

A third limitation is the possible confounding of primary traumatization with secondary traumatization. Previous research has attempted to differentiate the two constructs and found it a difficult task (61, 62). That said, perhaps such an attempt should be made whenever measuring ST, especially when the secondary traumatic exposure is not limited to a single, defined event.

The present study adds to the knowledge of professional quality of life in the understudied population of physicians. The findings highlight the importance of positive individual traits and positive work environment to improve quality of life and prevent pathologies among physicians. Practical support as well as emotional and psycho-educational support may help physicians structure their workload so that they will cope better.

CONCLUSIONS

Theoretically, if one understands the reasons for low job and low life satisfaction, one can institute policies that may improve job satisfaction, improved physician retention, more equitable distribution of physician services, and ultimately, better care for the patients (63). The message to mental health professionals from this study is that elevating hospital physician's life satisfaction will be a good indicator for positive mental health, compassion satisfaction and a good barrier against the detrimental effects of burnout.

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