Burnout levels in neonatal intensive care nurses and its effects on their quality of life

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KEY WORDS

neonatal intensive care unit, nursing, burnout, quality of life

ABSTRACT

Objective
The purpose of this study was to investigate burnout levels of nurses working in a neonatal intensive care unit (NICU) and the effects of burnout on their quality of life.

Design
This was a descriptive and correlational study. The researchers obtained data using a questionnaire to uncover the demographic and occupational characteristics of the nurses, and conducted face-to-face interviews via the Maslach Burnout Inventory (MBI) and the World Health Organization Quality of Life -BREF (WHOQOL-BREF).

Setting
The NICU of two state hospitals located in the north of Turkey.

Subjects
A total of 80 nurses.

Main outcome measures
Levels of burnout experienced.

Results
The score means of emotional exhaustion, depersonalisation and personal accomplishment were 14.90±5.53, 3.87±2.77 and 11.43±4.63, respectively. The results showed the nurses had burnout at moderate levels with regard to emotional exhaustion and personal accomplishment, and low levels of depersonalisation. In addition, the study showed a significant negative relationship in many sub-scales of the burnout and quality of life scale.

Conclusion
The nurses experienced moderate burnout in emotional exhaustion and personal accomplishment. The study found that, as burnout level increased, the quality of life of the nurses decreased. It is suggested that several measures must be taken to prevent burnout in nurses.

INTRODUCTION

Nursing is a stressful profession (McVicar 2003) and after a certain amount of time, this stress begins to emerge, initially as self-esteem issues, depression, physical complaints, and sleep disorders (Arikan and Karabulut 2004). Consequently, when nurses have experienced this stress over a lengthy period, they are exposed to burnout (Barutcu and Serinkan 2 008). One clinical psychologist, Freudenberger (1974), has defined burnout as a state characterised by physical and psychological fatigue, disappointment, underachievement, tiredness, and the desire to leave work, and it is more common in those individuals who have client-facing jobs. According to Maslach et al (1997), who asserted that long-term occupational stress leads to burnout, the latter refers to a state in which a professional detaches themselves from the purpose and specific meaning of their profession, and in which they are no longer interested in the people they serve. The authors defined this popular psychological phenomenon as "a syndrome of emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind" (Maslach and Jackson 1986).

Burnout is generally observed in individuals who have an occupation that provides people with support services, those who work for a long period of time in an environment in which emotional demands are high, and who work in professions that have high idealist and servicing values (Balcioglu et al 2008; Maslach and Schaufeli 1993). The group at the highest risk in terms of burnout is nurses, who are the individuals that spend the most time with care-receiving patients, provide 24-hour care and exert the most manpower (Barutcu and Serinkan 2008; Beckstead 2002).

Nurses, who spend the majority of their time at work, are working in an environment that is directly related to human lives and does not tolerate mistakes. Therefore, they are confronted with numerous stressors, such as the extensive use of technology, communication with many people, frequent encounters with death, conflicts within their team, irregular and long working hours, a race against time and a heavy workload. These stressors make nurses more prone to burnout (Kaya et al 2010; Alimoglu and Donmez 2005; Beckstead 2002; Sayil et al 1997).

Previous studies have shown that work-related stress differs, depending on the different work environments (Ebrinc et al 2002; Foxall et al 1990). Intensive care units, in particular, are extremely different working environments for nurses, who play an essential role within the healthcare team. These units are isolated, special areas of health organisations, and are equipped with sophisticated devices. The health personnel that work in such units have particular aims and skills, and work with a rapidly changing and heavy workload (Kavakli et al 2009). Intensive care nurses have a heavier workload and more responsibilities than nurses working in other wards (Bakker et al 2005); they are frequently faced with situations in which they must make quick decisions in the event of patients requiring first aid or an emergency response (Kavakli et al 2009). This being the case, these nurses are constantly faced with stress and burnout in their work environments, and those experiencing burnout distance themselves from their patients and their occupational responsibilities (Bakker et al 2005; Demerouti et al 2000). Consequently, they display negative behaviour, such as distancing themselves from their work, quitting their job, changing jobs frequently, going into work late and constantly getting signed off from work. Extensive burnout may lead to issues that affect the individual's quality of life, such as psychosomatic disorders, marital and family issues, insomnia and alcohol and drug abuse (Arslan et al 1996).

An individual's quality of life includes their physical functions, their state of mind, their familial relationships, their communication with society and their level of environmental interaction. Moreover, it shows how much these situations affect the functionality of the individual (Testa and Simonson 1996). Many difficult processes

that have originated at their workplace result in nurses experiencing burnout, and therefore, their quality of life is negatively affected. As a result, burnout, a problem that concerns many areas of the service industry, is a hidden threat. It decreases the quality of health services and leads to economic losses. The purpose of this study was to investigate the level of burnout in neonatal intensive care unit (NICU) nurses and the effects of burnout on their quality of life.

METHOD

Design

The researchers performed this descriptive and correlational study at the NICU of two state hospitals, located in the northern region of Turkey, between July 2010 and September 2010.

Sample

The study population initially consisted of 85 NICU nurses. The entire population of the NICUs were used in this study, rather than taking a sample group. However, five nurses were excluded as they did not wish to participate and were on annual leave. Therefore, the sample represented 94% of the NICU nurse population at the two hospitals.

Data Collection Instruments

The data was obtained utilising a semi-structured questionnaire (12 questions), in order to collect the demographic variables and working conditions of the nurses, according to the literature (Kaya et al 2010; Kavlu and Pinar 2009; Bakker et al 2005; Demerouti et al 2000), and the Maslach Burnout Inventory (MBI) and the WHO Quality of Life-BREF (WHOQOL-BREF). Data was also obtained using the face-to-face interview method and interviews lasted approximately 10-15 minutes.

Maslach and Jackson (1981) developed the MBI, and Cam (2001) adapted its validity and reliability to create a Turkish version for use with our group of nurses. The scale has three sub-scales; emotional exhaustion (9 questions), depersonalisation (5 questions), and personal accomplishment (8 questions), and has 22 statements that have a quintette Likert-type scoring system, which ranges from 0 to 4 (Cam 2001). The three sub-scales are examined separately, and there is no cut-off score for the scale or sub-scales. High emotional exhaustion and depersonalisation scores, and low personal accomplishment scores indicate high burnout level (Cam 2001). In the validity and reliability study that Cam (2001) conducted in 135 individuals, the Cronbach alpha values for emotional exhaustion, depersonalisation and personal accomplishment were 0.81, 0.70 and 0.77, respectively. In the present study, these values are 0.78, 0.55 and 0.76, respectively.

The WHOQOL-BREF is a summarised version of the original 100-questions WHO Quality of Life Scale (WHOQOL), and consists of four domains: physical health (7 questions); psychological (6 questions); environment (8 questions); and social relationships (3 questions), and two general statements, quality of life and general health. The general statement scores are not added to the domain, and they are separately assessed. The WHOQOL-BREF has a Likert-type scoring system, ranging from 1 to 5, while the scores for every sub-scale range from 4 to 20. When the scores obtained from the sub-scales increase, quality of life increases (Testa and Simonson 1996). Eser et al (1999) conducted a study to measure the validity and reliability of the Turkish version, and the Cronbach alpha values for physical health, psychological, environmental and social relationships were 0.83, 0.66, 0.73 and 0.53, respectively. In the present study, the Cronbach alpha values are 0.81, 0.70, 0.75 and, 0.60, respectively.

Ethical Considerations

Before the research began, official written permission was obtained from the hospitals in which the study was conducted. All participants were informed of the study's aims, and their informed written consent was obtained.

Analysis

Statistical analyses was performed using a statistical software program, SPSS (SPSS Inc., Chicago, IL, USA) for Windows (version 10). Data analysis included percentage, mean value and standard deviations, and the Mann-Whitney u test, the Kruskal-Wallis test, Pearson's correlation analysis and Cronbach's alpha coefficient were used. For all analyses, a *p* value of less than 0.05 was considered statistically significant.

FINDINGS

Table 1 illustrates the distribution of score mean of MBI sub-scales for the nurses working at the NICUs. As can be seen, the score means of emotional exhaustion, depersonalisation and personal accomplishment were 14.90±5.53, 3.87±2.77 and 11.43±4.63, respectively. That is, the nurses had a moderate level of emotional exhaustion and personal accomplishment, while they had a low level of depersonalisation.

Table 1: The burnout sub-scale score means of nurses

MBI	Number of items	Mean±SD	Min-Max Scores	Lower-Upper Scores
Emotional exhaustion	9	14.90±5.53	3-27	0-36
Depersonalisation	5	3.87±2.77	0-13	0-20
Personal accomplishment	8	11.43±4.63	1-22	0-32

As shown in table 2, 37.5% of the nurses were aged between 20 and 29 years, 41.3% were associate graduates, 81.3% are married, 66.3% had children and 53.8% had a monthly income that was equivalent to their expenditure. When the mean scores were analysed, it was found that those nurses aged 36 years and older had a low level of burnout in the sub-scale of personal accomplishment, which indicates there are significant differences between personal accomplishment mean scores according to participant age groups ($p<0.05$, table 2).

It was also found that 35.0% of the nurses had working experience totalling 15 years and more, 41.3% had been working at the NICU between two and four years, 62.5% were working at Level II-III NICU and 76.3% were working night shifts at the clinic. Although 65.0% had not chosen to work in NICU, they nevertheless worked there, and 70.0% of the participants were partly satisfied with their career (table 3). The nurses working at Level I ($p=0.042$) and those unsatisfied with their job ($p=0.000$) suffered from emotional exhaustion to a greater degree; while those in the age group 36 and over ($p=0.044$), those with at least 15 years' experience ($p=0.006$) and those who had been working at the unit for over five years ($p=0.003$) suffered from burnout on the personal accomplishment sub-scale. These results were statistically significant (table 3).

The mean scores for the nurses' quality of life with regard to physical health, psychological health, the environment and social relationships were 24.40±4.77, 18.26±2.74, 26.25±4.09 and 10.26±2.02, respectively. In addition, there was a significant negative relationship between the burnout and quality of life sub-scales, with the exception of the relationship between the depersonalisation-environment and the personal accomplishment-social relationships (table 4).

DISCUSSION

The nurses that participated in this study showed a moderate level of burnout in the sub-scales of emotional exhaustion and personal accomplishment, and a low level of burnout in the sub-scale of depersonalisation. Based on the sub-scale burnout definitions that he gave in 1974, Freudenberger indicated that nurses suffered moderate burnout, their level of despair, tension and anxiety increased moderately, their level of success

Table 2: The Socio-Demographic Characteristics and Distribution of Burnout Scores of Nurses

Variable	n	%	Emotional exhaustion Mean±SD	Depersonalisation Mean±SD	Personal accomplishment Mean±SD
Age					
20-29	30	37.5	15.43±5.19	3.93±2.76	13.16±4.47
30-35	29	36.2	15.44±5.72	4.41±2.71	10.75±4.33
36 and over	21	26.3	13.38±5.70	3.04±2.78	9.90±4.68
Statistics and significance			KW =1.690 df=2 p=0.430	KW =3.655 df=2 p=0.161	KW =6.258 df=2 p=0.044
Education					
High Scholl	8	10.0	15.62±6.50	3.37±2.19	13.75±3.57
Associate graduates	33	41.3	13.93±5.63	3.48±2.77	10.27±5.04
University	30	37.4	16.33±5.46	4.16±2.94	11.93±3.92
Postgraduate	9	11.3	13.00±3.74	4.77±2.68	12.00±5.61
Statistics and significance			KW =4.689 df=3 p=0.196	KW =2.604 df=3 p=0.457	KW =4.925 df=3 p=0.177
Marital status					
Married	65	81.3	14.80±5.71	3.76±2.85	11.01±4.36
Single	15	18.7	15.33±4.82	4.33±2.41	13.26±5.47
Statistics and significance			MW-U=464.00 p=0.771	MW-U=410.50 p=0.339	MW-U=373.00 p=0.157
Children					
Yes	53	66.3	14.41±5.57	3.50±2.60	10.96±4.42
No	27	33.7	15.85±5.42	4.59±2.99	12.37±4.98
Statistics and significance			MW-U=611.00 p=0.286	MW-U=568.50 p=0.132	MW-U=611.50 p=0.288
Economic status					
Income<expenditure	8	10.0	13.25±3.69	4.50±2.97	12.87±5.61
Income=expenditure	43	53.8	15.37±6.25	3.25±2.54	11.46±4.49
Income>expenditure	29	36.2	14.65±4.79	4.62±2.90	11.00±4.65
Statistics and significance			KW=1.381 df=2 p=0.501	KW=4.921 df=2 p=0.085	KW=0.787 df=2 p=0.675

and self-confidence decreased moderately, and they suffered a slight dip in their career. Another outcome was that nurses were not cold-hearted about their jobs, they cared, they put their heart into their work, as opposed to merely physically carrying out their tasks, and they treated patients as people and not just as objects. Kaya et al (2010), and Kavlu and Pinar (2009) also indicated that nurses suffered from moderate burnout, similar to results of the present study.

The present study proved that, with regard to personal accomplishment, burnout level increased with age. Studies that have focused on the effect of age on personal accomplishment have shown varying results. Ebrinc et al (2002) concluded that personal accomplishment decreased as individuals got older, and Sinat and Kutlu (2009) indicated that the level of personal accomplishment was higher in young adults. These results are similar to those obtained in the present study. In contrast with these results, Kaya et al (2010), Kocabiyik and Cakici (2008), and Taycan et al (2006) indicated that nurses became more competent in their job with increasing age; previous experiences changed their outlook on life, they became more mature when faced with certain situations, they gained experience, and level of personal accomplishment burnout decreased.

Table 3:The Occupational Properties and Distribution of Burnout Scores of Nurses

Variable	n	%	Emotional exhaustion Mean±SD	Depersonalisation Mean±SD	Personal accomplishment Mean±SD
Years in nursing					
1-6	27	33.8	16.33±5.56	4.14±2.97	13.85±4.55
7-14	25	31.2	15.40±5.01	4.20±2.27	10.60±3.94
15 or more	28	35.0	13.07±5.61	3.32±2.98	9.85±4.47
Statistics and significance			KW=4.479 df=2 p=0.107	KW=2.841 df=2 p=0.242	KW=10.349 df=2 p=0.006
Years on the NICU					
1	23	28.7	15.43±5.81	4.39±2.99	14.30±4.47
2-4	33	41.3	15.36±4.94	3.69±2.43	10.96±4.06
5 or more	24	30.0	13.75±6.06	3.62±3.03	9.33±4.31
Statistics and significance			KW=0.740 df=2 p=0.691	KW=1.127 df=2 p=0.569	KW=11.414 df=2 p=0.003
Department of the NICU					
Level-I	23	28.7	15.86±4.84	4.08±2.82	11.52±3.98
Level II-III	50	62.5	15.12±5.73	3.98±2.78	11.90±4.70
Management	7	8.8	10.14±4.22	2.42±2.37	7.85±5.27
Statistics and significance			KW=6.343 df=2 p=0.042	KW=2.266 df=2 p=0.322	KW=3.282 df=2 p=0.194
Working period					
Day shifts	19	23.7	13.84±6.57	3.26±2.32	10.57±5.59
Night shifts	61	76.3	15.22±5.18	4.06±2.88	11.70±4.31
Statistics and significance			MW-U=491.50 p=0.318	MW-U=510.50 p=0.432	MW-U=529.50 p=0.570
Chose to work at the NICU					
Willingly	28	35.0	14.60±5.01	4.10±2.65	11.92±4.66
Unwillingly	52	65.0	15.05±5.83	3.75±2.84	11.17±4.64
Statistics and significance			MW-U=701.00 p=0.785	MW-U=662.00 p=0.502	MW-U=675.00 p=0.592
Job satisfaction					
Satisfied	15	18.8	9.80±4.00	2.80±2.30	9.53±5.26
Unsatisfied	9	11.2	22.75±3.94	6.25±4.71	12.88±3.65
Partially satisfied	56	70.0	15.63±4.95	3.98±2.66	11.71±4.52
Statistics and significance			KW=21.176 df=2 p=0.000	KW=3.767 df=2 p=0.152	KW=3.876 df=2 p=0.144

Table 4: The relationship between the sub-scale scores of burnout and the quality of life of nurses

	WHOQOL-BREF			
MBI	**Physical health**	**Psychological**	**Environment**	**Social relationships**
Emotional exhaustion	r= -0.425**	r= -0.570**	r= -0.527**	r= -0.423**
Depersonalisation	r= -0.366**	r= -0.259*	r= -0.072	r= -0.326**
Personal accomplishment	r= -0.352**	r= -0.283*	r= -0.403**	r= -0.135

*p<0.05, **p<0.01

No statistical significance was found when the burnout scores of the nurses were compared according to their education level, marital status, number of children and monthly income. Previous studies on the effect of socio-demographic variables on burnout have shown various results. In a similar manner to the present study, Taze indicated (2008) there was no significant difference between burnout levels, according to level of education, marital status, number of children and monthly income. Kaya et al (2010) also discovered marital status did not affect burnout level. Metin and Gok Ozer (2007) indicated that level of education did not affect level of burnout; however, they discovered a significant relationship between motherhood, monthly income and burnout levels. Şahin et al (2008) and Taycan et al (2006) found that marital status had an effect on the level of burnout, and Barutcu and Serinkan (2008) indicated there was a significant difference between burnout and the depersonalisation sub-scale on the basis of motherhood and monthly income level. Moreover, the increase in the level of burnout regarding personal accomplishment based on years of experience and years at the NICU was statistically remarkable. Similarly, Taze (2008) also indicated the level of burnout on the personal accomplishment sub-scale increased according to increased age and years of experience in intensive care unit nurses. Kocabiyik and Cakici (2008), and Demir et al (2003) showed that the level of burnout on the personal accomplishment sub-scale decreased as occupational experience increased, which is contrary to the findings in this study.

It was also found nurses at management level had less emotional exhaustion, compared with the other nurses in the NICU. The ward nurses and intensive care nurses suffered from more emotional exhaustion due to nursing duties, long working hours, and the number of patients per nurse. Kaya et al (2010) Barutcu and Serinkan (2008), Metin and Gok and Ozer (2007) also indicated nurses in intensive care and emergency suffered more from emotional exhaustion, compared with the nurses in other departments, due to a greater workload and more complicated patients.

Moreover, in the present study, the nurses that were unhappy in their working environment experienced a greater amount of emotional exhaustion. This result is in accordance with the previous studies: Taze (2008) indicated that unhappy nurses that work in intensive care and emergency suffered from a higher level of emotional exhaustion, compared with nurses who worked in other departments; Sayil et al (1997) discovered that work-related issues caused burnout; and Yavuzyilmaz et al (2007) showed nurses who were unsatisfied with their working conditions had a higher emotional exhaustion score.

Unlike other studies, the relationship between level of burnout and the quality of life of the nurses was investigated, and observed a significant negative relationship between the two variables; as emotional exhaustion increased, quality of life decreased on all sub-scales, and when depersonalisation increased, quality of life decreased, with regard to the physical and psychological health and social relationships. Moreover, as burnout increased at the personal accomplishment level, quality of life decreased with regard to physical and psychological health and environment. Kavlu and Pinar (2009) indicated that quality of life and job satisfaction decreased with an increase in burnout. Lerner et al (1994) asserted there was a negative relationship between work-related tension and quality of life. The results of the present study are similar to those of previous studies.

LIMITATIONS OF THE STUDY

This study was conducted with 80 nurses working at two state hospitals, using non-parametric tests to analyse the effects of socio-demographic and occupational characteristics on their level of burnout and their life quality. In order to use parametric tests for analysis, larger sample groups are required. In addition, the working conditions for state hospitals, private hospitals, and university hospitals are very different in Turkey. It is believed that these different working conditions may produce results that are different from those obtained in this study. It is suggested that similar studies are conducted at different types of hospitals.

CONCLUSIONS

In this paper, the burnout level of nurses working in NICUs and the effects of burnout on their quality of life is reported. It was found that nurses had a moderate level of emotional exhaustion and personal accomplishment, and a low level of depersonalisation. It was also observed that nurses at management level, and those unhappy in their working environment, had greater emotional exhaustion. Moreover, the results showed that burnout at the personal accomplishment level increased with nurse age and the number of years working in a NICU. Additionally the quality of life of the nurses decreased as their burnout level increased.

The following suggestions are made:

- in order to increase the quality of nursing care, the factors causing burnout in the workplace must be determined, and precautions must be taken to minimise these;
- orientation programs, including training on how to cope with stress, must be planned for nurses starting work at the NICU;
- the burnout level of nurses and the reasons behind this must be defined and resolved at certain intervals;
- the nurses working in the NICU must be recognised for their hard work, via appreciation, honours, promotions, training achievements or experience awards;
- to prevent the adverse effects caused by working in the NICU for a long period of time, working plans in the form of staff rotation must be established;
- working hours must be rearranged according to workload;
- psychological consultancy services must be made available for NICU nurses; and
- social opportunities must be provided for NICU nurses.

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