

Iveta Rajnicova-Nagyova, Zuzana Katreniakova (eds.)

Reviewed book of scientific papers in extenso

# New challenges for public health and health systems in V4 countries

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## Health-related risk factors

### Occupational factors associated with burnout among nurses

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#### Abstract

**Objectives:** The aim of this study was to quantify the frequency of burnout among Slovak nurses, to shed more light on the associations between selected job characteristics and burnout syndrome in nurses.

**Methods:** A survey was conducted in hospitals in Slovakia in 2009-2010. A total of 770 nurses participated in the study. Data were collected the Maslach Burnout Inventory to measure burnout and the questionnaire comprising questions on socio-demographic variables and job characteristics.

**Results:** The investigated sample showed a higher degree of burnout syndrome under EE dimension in 56.8% of respondents and in the DP dimensions in 29.4% of nurses. Nurses with the length of work experience between 1-3 years and more than 5 years had a significant level of occurrence of burnout syndrome. Length of work experience and type of department are factors related to increased occurrence of burnout syndrome in the investigated sample.

**Conclusions:** Research results suggest that the profession of nurses should be supported by management aimed at preventing work-related stress and highlight the importance of application of intervention programs to prevent burnout syndrome in clinical practice.

**Keywords:** burnout, nurses, the length of work experience, the type of department

#### Abstrakt

**Cieľ:** Cieľom štúdie bolo stanovenie miery syndromu vyhorenia u sestier na Slovensku. Taktiež sme sa u sestier zamerali na vybrané faktory pracovného prostredia vo vzťahu k syndromu vyhorenia.

**Metódy:** Výskum prebiehal v období 2009-2010. Súbor tvorilo 770 sestier. Použitý bol dotazník Maslach Burnout Inventory, ktorý bol doplnený o socio-demografické údaje a informácie z oblasti pracovného prostredia.

**Výsledky:** Výsledky výskumu potvrdili vyššiu mieru syndrómu vyhorenia v dimenzii EE (56.8%) sestier a v dimenzii DP (29.4%). Sestry s dĺžkou praxe medzi 1-3 rokom a viac ako 5 rokov mali vyššiu mieru syndrómu vyhorenia. Dĺžka praxe a typ oddelenia sú faktory, ktoré ovplyvnili zvýšenú mieru syndrómu vyhorenia v sledovanom súbore.

**Záver:** Výsledky výskumu poukazujú na potrebu zlepšenia manažmentu prevencie stresu a aplikáciu intervenčných programov zameraných na prevenciu syndrómu vyhorenia v klinickej praxi.

**Kľúčové slová:** syndróm vyhorenia, sestry, dĺžka praxe, typ oddelenia

## **Introduction**

Burnout has been defined as a specific kind of occupational stress among human service professionals, as a result of the demanding and emotionally charged relationships between caregivers and their recipients (Maslach et al, 1986). It is a problem that is specific to the work context, in contrast to depression, which tends to pervade every domain of a persons life (Maslach et al, 2001). Clinical symptoms of burnout syndrome are nonspecific and include tiredness, headaches, eating problems, insomnia, irritability, emotional instability and rigidity in relationships with other people (Poncet et al., 2007).

The nursing profession is one of the most demanding and stressful occupations, due to the quantity and diversity of risk factors associated with the work environment (Jaworek et al, 2010). The most frequent risk factors of the burnout syndrome are excessive workload such as lack of time, shift work, type of department, organization culture (e.g. relationships among colleagues, role conflicts, etc.), not enough materials and technical equipment (Tummers et al, 2002). Leiter & Maslach (2004) identified work life-workload as a predictor of burnout syndrome.

The nursing profession is also further complicated by specific of type department. In the departments of internal medicine, surgery, oncology and others, nurses must be competent specific nursing interventions according to the type of disease. Working in intensive care units (ICU) can originate stress in nurses as well (Bakker et al, 2005; Chen et al, 2001). The presence of burnout syndrome in critical care nurses has been examined in several research studies (Davies, 2008; Embriaco et al, 2007; Solano et al, 2002). Critical care nurses have heavy workloads, extensive responsibilities, and only limited authority. They must care for unstable patients, carry out procedures accurately and react to extremely urgent matters.

Prevention of burnout syndrome in the individuals includes applying the principles of mental hygiene (a balanced relationship between stressors and salutors, increased self confidence, leisure time), with regard to external factors, good interpersonal relationships, social support, satisfactory working conditions, which are the most frequently factors (Iglesias et al, 2010; Simockova et al, 2009; Raggio et al, 2007; Piko, 2007). Preventing burnout can be accomplished by a focus on building engagement and utilizing organizational assessment that include tools for early detection (Maslach, 2011).

The aim of this study was to quantify the frequency of burnout among Slovak nurses and to shed more light on the associations between selected job characteristic and burnout syndrome in nurses.

## **Material and Methods**

### *Sample and procedure*

Nurses working in medical facilities in Slovakia the period of April 2009 and April 2010 participated in the research. 770 persons completed the questionnaire. The questionnaire comprised questions on socio-demographic variables, selected job characteristic and burnout.

The respondents answered the questions on-line. The questionnaires was published on the web page of the Slovak Chamber of Nurses and Midwives (SKSaPA), <http://www.sksapa.sk/DOTAZNÍK.html>, and the web page of World Health Organization, Country Office in Slovakia, <http://www.who.sk>.

The code for access to the web page (<http://www.sksapa.sk/DOTAZNÍK.html>) and completion of the on-line questionnaires was the registration number, by which we ensured that the questionnaire could only be completed by nurses. The registration number was not a part of the questionnaire; as a result, we could not find out who completed the questionnaire, which ensured the anonymity of respondents. The nurses were regularly informed of the possibilities and the necessity of being involved in the research aimed at selected health factors and burnout syndrome at the Congresses of the Slovak Chamber of Nurses and Midwives and through an article in the magazine *Sestra a lekár v praxi* (Dimunova, 2009) which is one of the most popular magazines among nurses.

## Measures

### *Burnout syndrome*

Maslach Burnout Inventory (MBI) was used to measure burnout syndrome (Maslach et al, 1981). The MBI has 22 items and three subscales (dimensions): emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA). The first subscale EE describes feelings of being exhausted by the job. The second one DP deals with self-esteem and behaviour towards recipients of care which lacks emotion for the individual. The last subscale PA addresses feelings about ability to cope with the problems of working directly with people in the work environment. Higher scores on emotional exhaustion and depersonalization, recode on personal accomplishment, indicate more burnout. As proven by a meta-analysis (Lourel et al, 2007) the MBI questionnaire can be used both universally and transculturally. The testimonial value of the MBI questionnaire was also verified in a multi-centre, which included 54 738 nurses from eight countries (Poghosyan et al, 2009) Cronbach's  $\alpha$  in this study sample yielded EE-0.91; DP-0.76; PA-0.87; MBI 0.89.

### *Type of department characteristics*

The types of departments were coded as follows: 1 = Internal medicine 2 = Surgery 3 = Paediatrics 4 = Psychiatry 5 = Oncology.

### *Statistical analyses*

For statistical analyses, *t-tests*, Pearson corrections and ANOVA with Post Hoc Tests (LSD and Scheffe) were used. All analyses were performed with the SPSS.16.

## Results

The demographic and job characteristics of the sample are shown in Table 1. The sample (n=770) consisted of 754 women (97.9%) and 16 men (2.1%). The mean age of respondents was 40.9 SD  $\pm$  8.9 years; the minimum age was 20 years and the maximum age 61 years. The average length of work experience was 21.8 SD  $\pm$  9.4 years, the shortest duration of practice was 1 year and the longest one was 44 years.

### *Length of work experience and burnout syndrome*

In the overall evaluation, no significant correlation (Pearson's correlation coefficient) between the length of work experience of respondents in a medical facility and burnout syndrome was confirmed. For more detailed analysis of correlation between the length of work experience and burnout syndrome among nurses, the length of work experience in the observed sample was divided into 7 categories: 1 = from 1 to 3 years, 2 = from 4 to 5 years, 3 = from 6 to 10 years, 4 = from 11 to 15 years, 5 = from 16 to 20 years, 6 = from 21 to 30 years, 7 = 31 years or more. For this variable, an important finding was that nurses with the length of work experience between 3 – 5 years have more statistically significant scores of burnout syndrome as compared with other categories of the length of work experience. Respondents with the lengths of work experience between 1 - 3 years and more than 5 years have significant occurrence of burnout syndrome (Table 2). The results show that the correlation between the length of work experience and burnout syndrome is not linear.

Table 1. Descriptive characteristics of the sample: means, standard deviations (SD), frequencies (n) and percentages (%)

	n / M	% / $\pm$ SD
<b>Gender</b>		
Male	16	2.1
Female	754	97.9
<b>Age (in years)</b>	40.96	$\pm$ 8.97
<b>Length of work experience (in years)</b>	21.8	$\pm$ 9.4
<b>Department</b>		
Internal medicine	332	43.1
Surgery	297	36.2
Paediatrics	66	8.6
Psychiatric	24	3.1
Oncology	36	4.7
<b>Type of unit</b>		
Intensive Care Units	143	25.1
Standard Departments	427	74.9
<b>Burnout syndrome</b>		
EE		
low	139	18.1
middle	183	23.8
high	437	56.8
DP		
low	298	38.7
middle	236	30.6
high	226	29.4
PA		
low	680	88.3
middle	56	7.3
high	27	0.9

Note: In the table only valid percentages are presented.

Abbreviations: EE-emotional exhaustion, DP–depersonalisation, PA–personal accomplishment, MBI–Maslach Burnout Inventory

Table 2. Correlation between the length of work experience and burnout syndrome

Length of work experience/years	Dimensions of burnout syndrome											
	EE			DP			PA			MBI total scale		
	M±SD	F	Post Hoc Tests	M±SD	F	Post Hoc Tests	M±SD	F	Post Hoc Tests	M±SD	F	Post Hoc Tests
1 to 3 (1)	22.33 ± 12.66	<b>2.647</b>	1-4 **	8.00 ± 3.00	1.671	n.s.	24.66 ± 13.05	0.952	n.s.	55.00 ± 26.45	<b>2.432*</b>	2-3*
4 to 5 (2)	28.04 ± 10.39	<b>***</b>	1-6 **	9.60 ± 6.69			18.42 ± 11.43			56.15 ± 20.47		3-4**
6 to 10 (3)	21.25 ± 12.95		3-4*	6.48 ± 6.09			16.12 ± 10.15			42.95 ± 18.22		3-5**
11 to 15 (4)	31.50 ± 13.18		3-5*	10.01 ± 7.26			18.26 ± 9.53			59.78 ± 24.35		3-7*
16 to 20 (5)	29.26 ± 12.68		3-6*	9.03 ± 6.39			18.36 ± 9.44			56.15 ± 20.40		
21 to 30 (6)	30.34 ± 12.51		3-7*	10.01 ± 6.86			17.15 ± 10.17			57.77 ± 22.40		
31 or more (7)	28.06 ± 13.07			8.74 ± 6.31			16.64 ± 10.55			53.35 ± 22.05		

Abbreviations: EE - emotional exhaustion, DP – depersonalisation, PA - personal accomplishment, MBI -Maslach Burnout Inventory

Significant differences between the groups are displayed in bold; \*  $p \leq 0.05$ , n.s. non-significant

Table 3. Burnout syndrome in relation to type of department

	EE			DP			PA			MBI total scale		
	M±SD	F	Post Hoc Tests	M±SD	F	Post Hoc Tests	M±SD	F	Post Hoc Tests	M±SD	F	Post Hoc Tests
<b>Type of department</b>												
Surgery (1)	28.04 ± 13.54	<b>5.005***</b>	1-5	9.10 ± 6.84	1.114	n.s.	16.79 ± 10.16	1.676	n.s.	53.88 ± 22.34	<b>3.528**</b>	1-5
Internal medicine (2)	29.16 ± 11.97		2-5 3-5	9.13 ± 6.27			17.71 ± 9.83			55.91 ± 21.35		2-5
Paediatrics (3)	29.81 ± 12.34			9.70 ± 6.87			19.65 ± 10.31			59.12 ± 22.21		
Psychiatric (4)	31.37 ± 12.60			9.29 ± 6.39			14.95 ± 8.33			55.62 ± 20.95		
Oncology (5)	37.75 ± 9.57			11.45 ± 6.09			18.52 ± 9.23			67.48 ± 20.95		

Abbreviations: *EE* - emotional exhaustion, *DP* – depersonalisation, *PA* - personal accomplishment, *MBI* -Maslach Burnout Inventory

Significant differences between the groups are displayed in bold; \*  $p \leq 0.05$ , n.s. non-significant

### *Type of department and burnout syndrome*

Nurses working at internal departments had a significantly higher score of total burnout syndrome (MBI) as compared with surgery departments ( $p \leq 0.05$ ). Similarly, internal and psychiatric departments yielded a significantly higher score of burnout syndrome in the EE dimension in comparison with surgery departments ( $p \leq 0.05$ ). Finally, internal departments had a significantly higher score of burnout syndrome in the PA dimension as compared with psychiatric departments ( $p \leq 0.05$ ). Intensive Care Units had a significantly higher score of burnout syndrome in the DP dimension as compared with standard departments ( $p \leq 0.05$ )

A highly statistically significant correlation was confirmed in the EE dimension and the total burnout syndrome (MBI). Nurses working at oncology departments have a higher degree of occurrence of burnout syndrome in the EE dimension than nurses working at internal, surgery and paediatric departments ( $p \leq 0.001$ ). Finally, oncology departments had a significantly higher score of the total burnout syndrome (MBI) as compared with internal and surgery departments ( $p \leq 0.01$ ). There was no significant correlation between nurses working at psychiatric departments and oncology departments (Table 3).

There was no statistically significant correlation between intensive care units and standard departments.

### **Discussion**

The aim of this study was to explore the associations between selected job characteristic and the extent of burnout among nurses. The results show that there are significant differences in the extent of burnout depending on the length of work experience and type of department.

As regards the correlation between the length of work experience and burnout syndrome, authors report different findings. Blanchard et al. (2010) did not confirm any correlation, similarly as Palfi et al. (2008), whose study included 805 nurses. On the other hand found out that the degree of burnout syndrome increased with the length of work experience for nurses working at intensive care units (Meltzer et al, 2004). In the overall evaluation of occurrence of burnout syndrome in our sample, no statistical significance was confirmed. More detailed analysis of the categories of the years of work experience confirmed a statistically significant correlation with the EE dimension and the DP dimension and in the total MBI. Nurses with the length of work experience between 1-3 years and more than 5 years had a significant level of occurrence of burnout syndrome. The results show that the correlation between the length of work experience and burnout syndrome is not linear. The influence of the length of work experience was also investigated in more detail by Iglesias et al. (2010), who divided the sample of observed nurses into three categories: 1-10 years, 11-20 years, and above 20 years of work experience. A significant correlation was confirmed in the EE and DP dimensions for 11-20 years of work experience, and for over 20 years of work experience (EE, DP).

According to studies by various authors (Fazelzadeh et al, 2008; Gillespie et al, 2003) individual types of departments (surgery, paediatrics, psychiatry, oncology) and specificities of work at intensive care units are significant factors influencing the occurrence of burnout syndrome. The oncology department had significantly higher scores of burnout syndrome in the EE dimension as compared with the internal, surgery and paediatric departments, and a higher total score MBI as compared with internal and surgery departments. Blanchard et al. (2010) confirmed the presence of a high score of burnout syndrome in the EE, DP dimensions in 340 medical workers working at oncology departments, which is in line with the results of our research. A high score of burnout syndrome in nurses working at the oncology department was found out by Lyckholm (2001). No significant correlation between the groups working at the psychiatric department and at the oncology department was confirmed. The results of our study are in line with the results of Kilfedder et al. (2001), who identified a high degree of burnout syndrome occurrence in the EE dimension, covering as much as 42% nurses working in the psychiatric department. Similar to our

findings are the results of a Turkish study (Ilhan et al, 2008), who found no burnout syndrome in any dimension involving nurses working at surgery departments.

Our study provides evidence for the suggestion that nurses working in intensive care units no have statistically higher scores of burnout syndrome as compared with standard departments. Differently, Mealer et al. (2007) examined if there had been a difference in burnout syndrome occurrence between 351 nurses working at intensive health care units and 140 nurses working at general departments (in our case considered as standard departments). Their results show higher occurrence of burnout syndrome among the nurses working in intensive care units. A higher score of burnout syndrome occurrence among nurses working in intensive care units was also confirmed by Poncet et al. (2007), who found burnout syndrome occurrence among 33% of nurses. Double higher burnout syndrome occurrence within the group of nurses working intensive care units was also confirmed by a Hungarian study (Palfi, 2008).

## Conclusions

The primary objective of the work was to define the personal and workplace factors that seem to be responsible for the formation of burnout. Nurses showed a high degree of burnout syndrome in the emotional exhaustion dimension and in the depersonalization dimension. Risk factors related to increased occurrence of burnout syndrome included the length of work experience and type of department (oncologic department).

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