

## Research Article

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# Professional burnout and concurrent health complaints in neonatal nursing

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**Abstract:** The aim of this study was to analyze nurses' professional burnout and health complaints and the relationship between the two components.

**Methods.** The anonymous survey included 94 neonatal intensive care nurses from two centers of perinatology. The Maslach Burnout Inventory-Human Services Survey (MBI-HSS) was used to evaluate professional burnout; it consisted of 3 components, Emotional Exhaustion, Depersonalization, and Personal Accomplishments, with 22 items in total. Health complaints were evaluated by 21 items, where nurses were asked to report the occurrence of symptoms within the last year. Scale means were presented with standard deviations (SD). Inferential analysis was conducted with multivariate logistic regression, adjusting for age, residence, and work experience.

**Results.** The mean score of professional burnout on the Emotional Exhaustion subscale was 14.4 (SD=7.91), Depersonalization 3.8 (SD=4.75), and Personal Accomplishment 29.1 (SD=10.12). The health assessment revealed that sleeplessness, lack of rest, nervousness, and tiredness were the most common complaints. The regression analysis revealed that tiredness was independently associated with significantly increased odds of professional burnout (OR=4.1).

**Conclusions.** In our study, more than half of the nurses in neonatal intensive care had moderate or high levels of emotional exhaustion, while levels of depersonalization were significantly lower. In contrast, the level of personal

accomplishment was low in more than half of the nurses. The most common health complaints were sleep disturbances, nervousness, and tiredness. Tiredness was most strongly associated with professional burnout.

**Keywords:** Intensive care; Professional burnout; Stress at work; Health complaints

## 1 Introduction

Recently, researchers have been paying more attention to professional burnout as a common phenomenon in nursing. They have investigated not only the syndrome as such, but also related factors and predictors [1,2].

Nursing in neonatal intensive care is specific, in that these nurses regularly face vulnerable group of patients and their relatives [3]. While communicating with family of preterm or sick infants, nurses have to display appropriate empathy, attitude, and emotions. However, parents of a newborn may have unrealistic expectations for the nurse and thus be a cause of stress [4]. Therefore, the nurses working in intensive care units feel much tension; they have to complete many tasks in a short time, while simultaneously receiving and comprehending much information. Sorlie et al. indicate that the lack of time could lead to a guilty conscience, as well as tiredness and even burnout [5].

Long-lasting stress that is common in nursing and sometimes leads to mental, physical, and emotional exhaustion may subsequently lead to burnout. This process depends upon individual peculiarities and manifests both in physical and psychological symptoms [6, 7]. Reactions to stressful events are also individual and depend on personality type, competences, and other factors [7].

Extensive workload, frequent urgent and complex situations, and encounters with suffering and death are quite common phenomena for nurses in intensive care, and such circumstances influence the occurrence of professional burnout [7-9]. Studies indicate that currently professional burnout is a significant psychosocial problem,

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attracting the interest and concern of the scientific community in America and Europe because of its individual and collective consequences [8,10-13].

However, the professional burnout in Lithuanian nurses has not been addressed. Therefore, our study aimed to analyze the professional burnout and health complaints among nurses working in neonatal intensive care units (NICUs). Our approach did not consider health complaints as direct risk factors for professional burnout; rather, they are considered here as concurrent states and symptoms related to professional burnout.

## 2 Material and methods

The study was conducted in NICUs of 2 perinatology centers in tertiary health care in Lithuania. Nurses were included if they had been working in NICU for at least one year and provided written consent. The study sample included 94 nurses working in neonatal care (response

rate 90%). This comprised virtually the whole general population of interest. Overall, at the time of study there were 106 nurses working in neonatal intensive care in the country; of those, 104 met the eligibility criteria. Nurses who were on maternity leave were not enrolled in the study.

The mean age of the sample was 41.8 years, mean work experience 21.0 years, and mean work experience in NICU 19.4 years. General characteristics of the study sample are presented in Table 1.

The data were collected using an anonymous questionnaire. The *Maslach Burnout Inventory – Human Services Survey* (MBI-HSS) was used to assess professional burnout. The scale was translated into Lithuanian and was validated previously [11]. It comprised 22 items in 3 subscales: Emotional Exhaustion (9 items), Depersonalization (5 items), and Personal Accomplishment (8 items). The responses were ranked on a 6-point Likert scale from 0 („never“) to 6 („daily“). Higher levels of professional burnout implied higher scores of emotional exhaustion and depersonalization and lower scores of personal accomplishment. The subscales' internal consistency in this study was appropriate (Cronbach  $\alpha$  for Emotional Exhaustion was 0.79, for Depersonalization 0.70, and for Personal Accomplishment 0.76). For analytical purposes, the scores of subscales were categorized as low, moderate, or high based on pre-defined scale-specific cut-offs [11].

Health complaints were evaluated by use of 21 items, and the nurses were asked to report the occurrence of symptoms within the last year. Complaints were rated on a Likert scale from 0 („never“) to 6 („all of the time“). This set of items revealed very high internal consistency (Cronbach  $\alpha$  was 0.90). In analyses regarding symptoms, the answers “steadily” and “frequently” were considered as frequent symptoms and others (“sometimes”, “rarely” or “never”) as rare.

### 2.1 Statistical data analysis

Data analysis was performed with the „IBM SPSS 20“ statistical package. The confidence level was set at 95% ( $p > 0.05$ ). Descriptive statistics included mean  $\pm$  standard deviation (SD) for continuous variables and absolute numbers with percentages for categorical variables. Inferential analysis was conducted by logistic regression. The regression included univariate as well as multivariate analysis, with adjustment for age, residence, and work experience. The level of associations between professional burnout and health complaints were quantified in odds

**Table 1:** Demographic characteristics of study sample

Characteristics		n	%
Gender	Women	94	100.0
Age	23–40 years	38	40.4
	41–59 years	56	59.6
	Mean $\pm$ SD	41.8 $\pm$ 8.14	
Residence	Major city	85	90.4
	Town	3	3.2
	District centre	3	3.2
	Rural area	3	3.2
Education	College	75	79.8
	University education	19	20.2
Marital status	Married	56	59.6
	Cohabiting couples	7	7.4
	Divorced	9	9.6
	Single	18	19.1
	Widow	4	4.3
Total work experience	1–20 years	44	46.8
	21–38 years	50	53.2
	Mean $\pm$ SD	21.0 $\pm$ 8.74	
Work experience in neonatal intensive care	1–20 years	53	56.4
	21–38 years	41	43.6
	Mean $\pm$ SD	19.4 $\pm$ 9.37	

ratios (OR) – crude (univariate analysis) and adjusted (multivariate analysis).

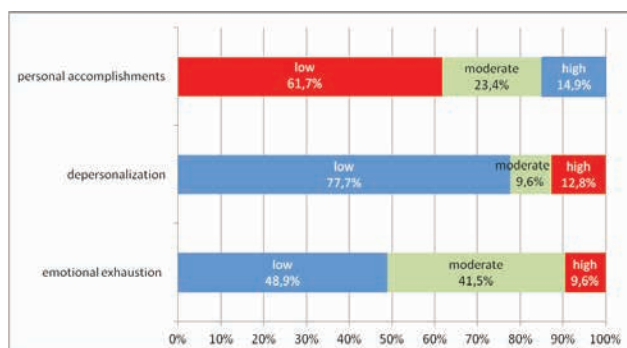
**Ethics of the study:** The study was approved by Kaunas regional committee for bioethical research (permission No. BE-2-15).

### 3 Results

The mean score of *Emotional Exhaustion* was  $14.4 \pm 7.91$  points (maximum 54 pts). The most expressed symptoms of emotional exhaustion were physical exhaustion after work (58.5%), emotional exhaustion (42.5%), and strain due to dealing with people all day (35.0%). Overall, moderate emotional exhaustion was common in 41.5% and high in 9.6% of neonatal nurses (Figure 1).

Meanwhile, the mean score of *Depersonalization* was  $3.8 \pm 4.75$  points (maximum 30 pts). It is worth noting that signs of depersonalization were not common – for instance, less than 20% of respondents had a detached and impersonal approach towards patients at least once per month. The total depersonalization as a burnout component revealed the prevalence of moderate levels of depersonalization in 9.6% and high levels in 12.8% of nurses (Figure 1).

Finally, the *Personal Accomplishments* subscale's mean score was  $29.1 \pm 10.12$  points (maximum 30 pts). Low levels of self-esteem and self-efficacy and achievement (as components of professional burnout) were found in 61.7%, and moderate levels were found in 23.4% of respondents (Figure 1). In terms of specific items of personal accomplishments, more than half of respondents (54.3%) reported feeling their positive influence on other people's lives. The majority of nurses could understand their patients' feelings and were able to deal effectively



**Figure 1:** Risk of professional burnout as expressed in MBI-HSS subscales.

with patients' problems. In addition, 41.5% of respondents revealed feeling energetic at least several times per week.

From a dimensional perspective regarding professional burnout among nurses, personal accomplishment seems to be the most expressed construct; emotional exhaustion was less expressed, while depersonalization was the least expressed aspect of professional burnout in our sample.

The analysis of health complaints in nurses showed that the majority of respondents did not report frequent symptoms (Figure 2). The most commonly reported complaints were tiredness, nervousness, sleeplessness, lack of rest, trouble falling asleep, and tension headaches. Analysis of health complaints as a whole showed that 36.2% of nurses had no complaints, 19.1% had one complaint, and 44.7% reported two or more health complaints.

In order to establish the association of health complaints with professional burnout in nurses working in NICUs, the logistic regression analysis was conducted. The most prevalent health complaints such as tiredness, nervousness, trouble falling asleep, sleeplessness and lack of rest, and headaches were selected for analysis. In addition, we constructed an overall complaints indicator, with the risk group having more than one health complaint.

The univariate analysis revealed that only tiredness can be considered a symptom associated with professional burnout, with odds (OR=3.8) ( $p < 0.05$ ); all other symptoms were non-significant. Multivariate analysis results, including age, residence, and work experience as covariates (Table 2), did not deviate from multivariate effect estimates, with tiredness remaining the only independent symptom related to professional burnout (OR=4.1). It should also be noted that overall health complaints as an indicator of burnout reached borderline significance, increasing the odds risk of professional burnout more than twice (OR=2.2). Presumably, the power of the study was not sufficient to reach statistically significant levels.

It can also be noted that age group, residence, and professional experience were not significant factors for burnout in multivariate analyses; however, non-significance may also be a result of a limited power of the study.

### 4 Discussion

Our study was the first in Lithuania that addressed the professional burnout of nurses working in neonatal intensive care units. Keeping in mind that the burnout mani-

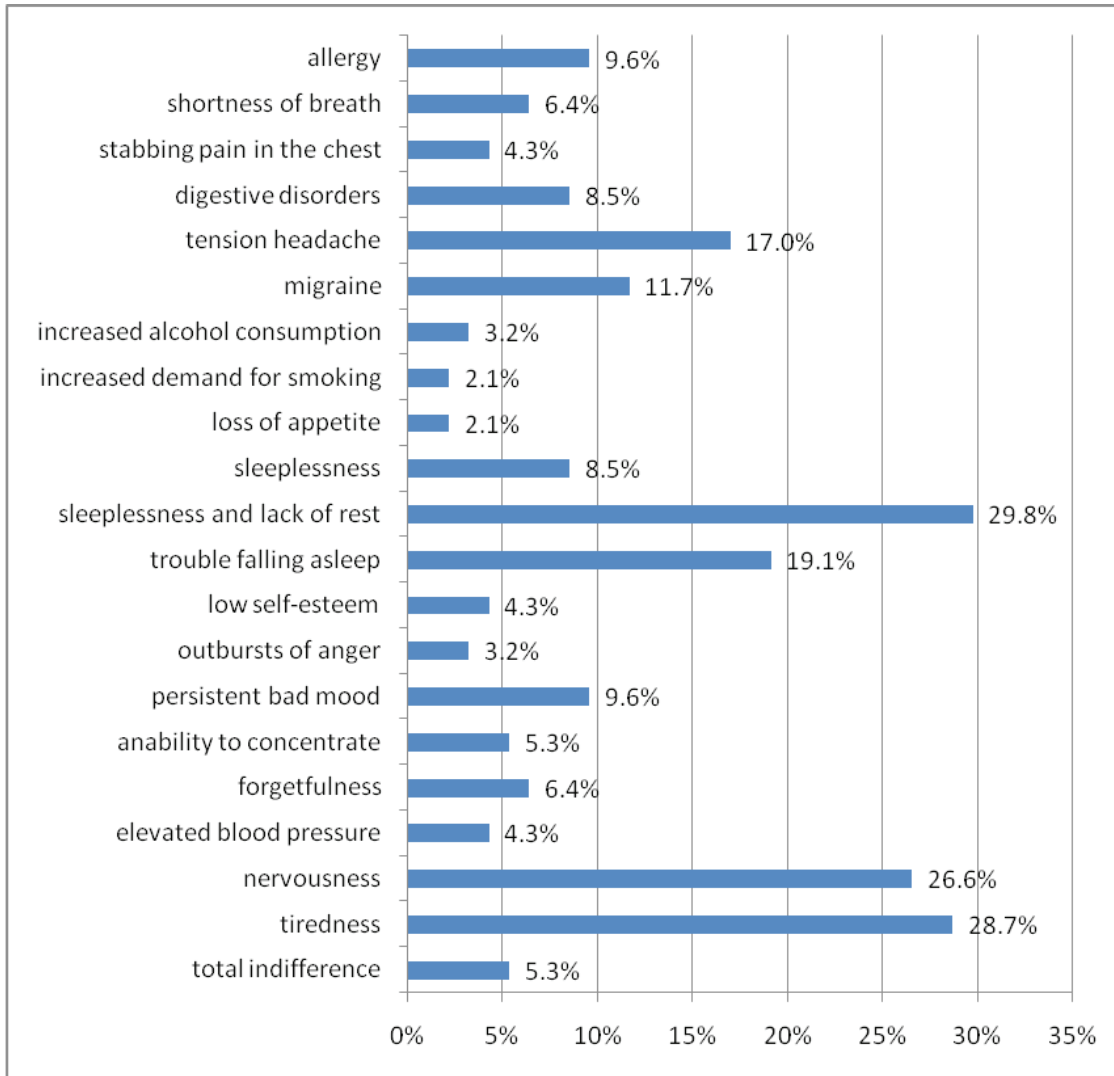


Figure 2: Prevalence of frequent health complaints in nurses.

Table 2: Health complaints as predictors of professional burnout: logistic regression

Complaint	Crude odds ratio	95% CI	Adjusted odds ratio *	95% CI
Tiredness	3.828	1.372–10.682	4.058	1.386–11.882
Nervousness	1.538	0.598–3.951	1.516	0.575–3.994
Trouble falling asleep	1.272	0.445–3.635	1.269	0.430–3.742
Sleeplessness and lack of rest	1.594	0.641–3.968	1.607	0.630–4.095
Headaches	1.130	0.389–3.278	1.068	0.350–3.264
Overall complaints	2.160	0.931–5.009	2.171	0.916–5.141

\* For age, residence, and work experience

festations in different ways, we wanted to gain insight into the association of this phenomenon with general health complaints. These symptoms are usually easily reported and observable, and therefore, they can serve as hints for professional burnout.

The findings of our study suggest that from the perspective of health complaints, tiredness, rather than other subjective symptoms, can be regarded as the most specific concurrent condition in cases of professional burnout among nurses. However, overall complaints (more than

one reported) may also have potential as predictors, although they did not reach statistical significance.

The environment at NICU is strongly affected by the pertinent balance between patient life and death. This is one of the main causes of professional burnout in health care professionals working in intensive care [10,11,15]. The majority of research on the issue of professional burnout is related to the methodological use of the *Maslach Burnout Inventory*. Burnout is suggested when all three components are specifically met – namely, high levels of emotional exhaustion and depersonalization, as well as low levels of personal accomplishments [9]. However, the proportion of this „extreme“ group of workers is rarely reported; instead, researchers prefer to report burnout by separate components only [8,10]. In addition, the definition of burnout that is based on all three domains potentially leads to an underestimate of the burnout prevalence. Therefore, we approached the discussion of burnout in separate domains.

In looking into the prevalence of burnout components in our study, we can state that more than half of our nurses had high or moderate levels of emotional exhaustion. This phenomenon is characterized by decreased emotions, apathy, and psychic emptiness. Compared to other studies, we found that it is less common elsewhere. For instance, among Iranian intensive care nurses the emotional exhaustion was mostly moderate [16], while among Iranian obstetricians, it was predominantly low (58%) [17]. We suggest that the emotional state of nurses is influenced by work specifics. In daily practice they have to communicate with parents of newborns who face a sense of loss or disappointment in cases of a preterm baby or neonatal death. This may explain why such a high proportion of neonatal nurses reported moderate or high (51% in total) levels of emotional exhaustion in our study.

Additionally, depersonalization as a component of professional burnout is described as a tendency to a negative, cynical, or indifferent view towards people at work, that is, an approach to personalities as objects rather than subjects. In our study, this component was considerably less expressed than exhaustion, being common in less than a quarter of nurses (22% had moderate to high depersonalization). Depersonalization is not a usual aspect in neonatal intensive care, since in majority of cases the nurses have a sense of compassion and devotion and a family-oriented health care approach. These principles are inherent for nurses in many countries. For instance, the study on Iranian nurses' professional burnout and clinical competences showed similar findings [16]. Similar findings with rather moderate levels of depersonalization

among intensive care nurses were observed in Spain and Turkey [13,17].

In contrast to depersonalization, more than 60% of our respondents reported low levels of personal accomplishment, which serves as one of the indicators of burnout. This aspect of burnout is described as a negative evaluation of one's own professional skills and qualifications, restriction of professional potential, and an underestimate of one's own importance at work. Similar findings were recently reported in Spain, where personal accomplishments were mainly low or moderate [18, 19]. It can be suggested that this is a result of limited independence of nurses at work, as well as underestimates of their input by physicians.

From the perspective of risk factors, protective factors, or consequences of professional burnout, we looked into possible health effects related to burnout. Previously, professional burnout in nursing was demonstrated to be related to possible health changes in another study in Lithuania by Vimantaite and Seškevičius, [2] who investigated burnout in nurses in cardiac surgery. They found that 67% had a general sense of tiredness after work, 32% reported strong headaches, while 63% had leg pains after work [2]. Such findings are similar to our findings, where nurses mostly reported lack of sleep and rest, tiredness, headaches, and nervousness. In particular, the tiredness was found to be the main independent concurrent condition to burnout. We were not able to find other studies supporting such a finding. In contrast, a South African study on nurses' professional burnout and health found that high levels of emotional exhaustion and depersonalization were associated with anxiety and sleeplessness [20,21]. Our findings could partially support this trend, since we detected an association of borderline significance between the overall number of complaints and burnout. The tiredness as a risk factor of professional burnout should be approached with some reservation. First of all, tiredness could occur as a result of many work-related factors. For example, longer work hours, more nightly shift hours, and higher salary as a financial motivation may all indicate a higher likelihood of a sense of tiredness among nurses. On the other hand, we suggest in our study that the majority of our sample was quite homogeneous regarding its working burden, due to similar working environments and tertiary level of intensive care. The salary as a factor is likely to have a negative effect, since the salaries of nurses are usually lower than those of physicians working with them in intensive care. In general, it is very complicated to estimate whether the level of tiredness in our study sample was typical or higher than for the general middle-aged female population in Lithuania.

Therefore, it is not clear whether tiredness or the other symptoms are specific indicators of burnout for nurses in general or for nurses working at NICUs in particular. So, the associations found in our study should be approached carefully from a causal perspective. On the one hand, physical and emotional overload may lead to a permanent sense of being tired, which later leads to the onset of professional burnout. On the other hand, long-lasting tiredness may be regarded as a symptom of professional burnout. Therefore, we cannot relate causality in cases of association between health complaints and professional burnout. Rather, the complaints may serve as indirect markers of possible burnout. Thus, due to the multifactorial nature of both burnouts and complaints, we should be careful in pointing out direct relationships between the phenomena. However, observed associations suggest that the elimination (at least, partial) of health complaints may lead to lower levels of professional burnout, but this hypothesis should be addressed in future research.

The sample and its size in our study may be regarded both as a strength and weakness of the study. Since the sample comprised only 94 subjects, this is rather small and prevented us from drawing firm conclusions based on multivariate analyses. However, the sample was 90% representative of the general population of nurses working in intensive neonatal care in Lithuania, which we consider a very high response rate.

We recommend that for prevention of professional burnout it is essential to emphasize two types of measures: the first would be oriented towards the environment in the intensive care unit and the second towards the empowerment of workers to deal with that environment. In addition, the staff in intensive care should be trained to recognize professional burnout symptoms and to know where to search for help if needed. The hospital and unit administration staff could be made more aware of professional burnout risks in nurses and the ways to prevent or decrease it.

## 5 Conclusions

In our study, more than half of nurses in neonatal intensive care had moderate or high levels of emotional exhaustion, while levels of depersonalization were lower. In contrast, levels of personal accomplishment were low in more than half of the nurses. Regarding health complaints, tiredness was the symptom most strongly and independently associated with professional burnout.

## Abbreviation list

NICU - neonatal intensive care units  
SD - standard deviation  
OR - odds ratio

**Conflict of interest statement:** Authors state no conflict of interest

## References

- [1] Adriaenssens J., Gucht V.M.J., Doef M.P., Maes S., Exploring the burden of emergency care: Predictors of stress-health outcomes in emergency nurses, *J Adv Nurs.*, 2011, 67, 1317–1328, DOI: 10.1111/j.1365-2648.2010.05599.x
- [2] Vimantaitė R., Šeškevičius A., The burnout syndrome among nurses working in Lithuanian cardiac surgery centers, *Medicina (Kaunas)*, 2006, 42(7), 600-605
- [3] Valizadeh L., Farnam A., Zamanzadeh V., Bafandehzende M. Sources of Stress for Nurses in Neonatal Intensive Care Units of East Azerbaijan Province, Iran. *J Caring Sci.*, 2012, 1(4), 245-254, DOI: 10.5681/jcs.2012.034
- [4] Ward K., Perceived needs of parents of critically ill infants in a neonatal intensive care unit (NICU), *Pediatr Nurs*, 2001, 27, 281-286
- [5] Sorlie V., Kihlgren A., Kihlgren M. Meeting ethical challenges in acute care work as narrated by enrolled nurses, *Nurs Ethics.*, 2004, 11, 179-188, DOI: 10.1191/0969733005ne770oa
- [6] Santed M.A., Sandin B., Chorot P., Olmedo M., Garcia-Campayo J. The role of negative and positive affectivity on perceived stress – subjective health relationships, *Acta Neuropsychiatr.*, 2003, 15, 199-216, DOI: 10.1034/j.1601-5215.2003.00036.x
- [7] Payne N., Occupational stressors and coping as determinants of burnout in female hospice nurses, *J Adv Nurs.*, 2001, 33(3), 396-405, DOI: 10.1046/j.1365-2648.2001.01677.x
- [8] Da Silva J.L., Soares Rda S., Costa Fdos S., Ramos Dde S., Lima F.B., Teixeira L.R., Psychosocial factors and prevalence of burnout syndrome among nursing workers in intensive care units, *Rev Bras Ter Intensiva.*, 2015, 27(2), 125-33, DOI: 10.5935/0103-507X.20150023
- [9] Lavoie-Tremblay M., Feeley N., Lavigne G.L., Genest C., Robins S., Fréchette J., Neonatal Intensive Care Unit Nurses Working in an Open Ward: Stress and Work Satisfaction, *Health Care Manag (Frederick).*, 2016, Jul-Sep 35(3), 205-216, DOI: 10.1097/HCM.000000000000122.
- [10] Ayala E., Carnero A.M., Determinants of Burnout in Acute and Critical Care Military Nursing Personnel: A Cross-Sectional Study from Peru, *PLoS One*, 2013, 8(1), e54408, DOI: 10.1371/journal.pone.0054408
- [11] Mikalauskas A., Širvinskas E., Marchertienė I., Macas A., Samalavičius R., Kinduris Š. et al., Burnout among Lithuanian cardiac surgeons and Cardiac anesthesiologists, *Medicina (Kaunas)*, 2012, 48(9), 478-484
- [12] Esfahani M.S., Mirzaee M., Boroumandfar K., Abedi M.R., Job burnout and its relation with personality traits among the

- midwives working in Isfahan, Iran, *Iran J Nurs Midwifery Res*, 2012, 17(3), 220-224
- [13] Özden D., Karagözoğlu Ş., Yildirim G., Intensive care nurses' perception of futility: job satisfaction and burnout dimensions, *Nurs Ethics*, 2013, 20(4), 436-447, DOI: 10.1177/0969733012466002
- [14] Maslach C., Jackson S.E., Leiter M.P., Maslach burnout inventory manual, 3rd ed, Palo Alto, California: Consulting Psychological Press, Inc.; 1996
- [15] LeSergent C.M., Haney C.J., Rural hospital nurse's stressors and coping strategies: a survey, *Int J Nurs Stud*, 2005, 42, 315-324, DOI: 10.1016/j.ijnurstu.2004.06.017
- [16] Soroush F., Zargham-Boroujeni A., Namnabati M., The relationship between nurses' clinical competence and burnout in neonatal intensive care units, *Iran J Nurs Midwifery Res*, 2016, 21(4), 424-429, DOI: 10.4103/1735-9066.185596
- [17] Losa Iglesias M.E., Becerro de Bengoa Vallejo R, Prevalence and relationship between burnout, job satisfaction, stress, and clinical manifestations in Spanish critical care nurses, *Dimens Crit Care Nurs*, 2013, 32(3), 130-137, DOI: 10.1097/DCC.0b013e31828647fc
- [18] Gabbe S.G., Webb L.E., Moore D.E., Mandel L.S., Melville J.L., Spickard W.A., Can mentors prevent and reduce burnout in new chairs of departments of obstetrics and gynecology: results from a prospective, randomized pilot study, *Am J Obstet Gynecol*, 2008, 198(6), 653-e1, DOI: 10.1016/j.ajog.2007.11.004
- [19] Santana Cabrera L., Hernandez Medina E., Eugenio Robaina P., Sanchez-Palacios M., Perez Sanchez R., Falcon Moreno R, Burnout syndrome among nurses and nurses' aides in an intensive care unit and admission wards, *Enferm Clinica*, 2009, 19(1), 31-4, DOI: 10.1016/j.enfcli.2008.06.001
- [20] Poncet M.C., Toullic P., Papazian L., Kentish-Barnes N., Timsit J.F., Pochard F. et al., Burnout syndrome in critical care nursing staff, *Am J RespirCrit Care Med*, 2007, Apr 1, 175(7), 698-704, DOI: 10.1164/rccm.200606-806OC
- [21] Khamisa N., Peltzer K., Ilic D., Oldenburg B., Work related stress, burnout, job satisfaction and general health of nurses: A follow-up study, *Int J NursPract*, 2016 Dec, 22(6), 538-545, DOI: 10.1111/ijn.12455