



Burnout syndrome and social support in Greek nursing professionals

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Abstract

Introduction: Several studies have shown that nursing professional is one of the groups at risk of suffering high level of burnout syndrome. Social support has a positive impact on their overall wellbeing. The aim of the study was to investigate burnout syndrome and social support in Greek nursing professionals and if social support affects burnout levels.

Material and Method: A sample of 125 nurses was recruited from hospitals in the broader area of Athens and all over Greece. Measurements will be conducted with the following instruments: the Multidimensional Scale of Perceived Social Support (MSPSS) and the Maslach Burnout Inventory (MBI) for measuring burnout and social support, respectively.

Results: The analysis of the measurements indicates that nursing professionals experience high levels of burnout syndrome but there is no significant correlation with social support in the majority of the nursing staff.

Conclusion: The debilitating project and numerous hours of work are additionally highlighted in this study, where many medical attendants take note that they feel rationally depleted by their work. Social support plays an important role in health but in our study, the correlation among them is rejected, so it would be interesting to carry out further studies.

Keywords: Burnout syndrome, social support, nursing staff

1. Introduction

Burnout syndrome and social support have been the main topics of thousands of books and journal articles, both academic and in the popular press. Health care professionals such as nurses are indicated as the most studied occupational groups in the surveys regarding burnout syndrome [1]. Freudenberger was the first who used the term "burnout syndrome" in 1974. He described it as mental and physical exhaustion, not only in health care professionals but also in other specialties where interpersonal interaction and dependency relations are developed [2, 3]. According to Maslach, emotional exhaustion, depersonalization and reduced feeling of personal accomplishment, are the three components that create this syndrome [3]. That phenomenon leads the professional to not have the necessary mental reserves to meet the requirements of the job. According to many researchers, burnout syndrome is a little unclear as a term and identifies with notions like depression, professional dissatisfaction and workplace stress [4].

Burnout is considered to have a wide range of symptoms and there are three main areas of them that are considered to be signs of it. Firstly is the exhaustion in which people are feeling emotionally exhausted and tired. Secondly is the alienation from (work-related) activities and the staff may begin being negative about their working conditions and

their associates. At last, another sign is reduced performance. In this sign they are extremely negative about their tasks and they think that it is difficult to focus [5]. Measures to prevent burnout can be differentiated according to the preventive approach and levels of prevention. Preventive ways to deal with being considered are both alterations in the workplace and furthermore enhancements in the person's capacity to cope with stress. Finally the levels of prevention can be divided into primary preventive measures, secondary measures and tertiary measures and therapies such as pharmacological treatment, psychotherapy, and change of work environment combine with rehabilitation and retraining [6, 7].

Moreover, social support plays an important role in health and has been examined by many researchers. Social support enhances the quality of life and provides a buffer against adverse life events. Social support is any type of communication that helps individuals feel more comfortable with a situation and feel that they have control of it. According to Schaefer, Coyne, and Lazarus, there are five types of social support which are emotional support, esteem, information, network and tangible support. Social support has many benefits in psychological and physical health and does not only help the individuals to feel better or cope with challenges but leads them to improve overall well-being [8].

Most researches have shown that quality of relationships is a better predictor of good health than quantity of relationships, although both are important^[9]. In studies, low social support has been associated with physiological and neuroendocrine indices of heightened stress reactivity, including elevated heart rate, increased blood pressure and exaggerated cardiovascular and neuroendocrine responses^[10]. A related explanation for the benefits of social support is that if people have a support network, they have access to the tangible needed to stay healthy.

Social support can be obtained from coworkers, spiritual advisors, friends, family, members of one's community or neighborhood and health care personnel^[11]. A growing body of evidence indicates that there exists a positive relationship between social support and job satisfaction. In a meta-analysis, support from pioneers and co-workers was seen to positively affect workers' accounted for work fulfillment^[12, 13]. In most studies, just help given by the workers' supervisor was seen to impact work fulfillment and saw achievement though, support given by associates had no effect or to a much lower extent^[14].

The hospital nursing staff is identified as one of the groups at risk of suffering burnout syndrome due to the stress related to their job tasks. A study reported that 1/3 of nurses all over the world are showing symptoms of burnout syndrome at the early stages of their career and the risk of developing mental disorders is very high. Another study among long-term care nursing staff revealed that job demands with more emotional exhaustion, more depersonalization, and less individual achievement. Occupation assets were related to less passionate fatigue and more elevated amounts of individual achievement^[15, 16].

A recent study in Swedish healthcare workers discriminated that anxiety, sleep disturbance, neck and pack pain, memory impairment and self-reported depression are associated with burnout syndrome^[17]. A research among Iranian nurses correlates burnout with productivity and found that personal accomplishment and productivity have a positive correlation in contrast with depersonalization and emotional exhaustion. Unlikely, a study among Hungarian health care staff showed higher scores in emotional exhaustion and depersonalization than personal accomplishment^[18, 19].

Considering the above, research on social support has observed that it is necessary to consider it. The impact of social support upon job stress in nursing staff has been analyzed according to the help coming from supervisors and co-workers. Some studies found that supervisors buffered the negative effects of the job demands on hospital nursing staff. Furthermore, research in Spain showed that lack of social support in nursing was associated with impaired nurse wellbeing and more unfavorable work outcomes^[20, 21].

2. Aim

The aim of this study was (a) to examine social support as well as burnout in Greek nurses and (b) to determine if social support affects burnout levels. The central hypothesis is that nursing professionals experience a high level of burnout syndrome and that there is a significant correlation with social support

3. Materials and methods

3.1 Participants

A sample of 125 nurses was recruited from hospitals in the

broader area of Athens and all over Greece. Burnout's levels and social support were chosen by us to investigate in Greek nurses and if social support affects these levels. Selection criteria were included: (a) >18 years of age, (b) ability to communicate in Greek, (c) have work experience, (d) not carry any psychological disorder. The survey was conducted between February 2017 and March 2017.

Participation in the research was voluntary, ensuring the anonymity of the participants. All subjects were informed of their rights to refuse or discontinue participation in the study according to the ethical standards.

3.2 Tools

The MSPSS measure perceived social support across cultures^[22]. The MSPSS was validated in a wide range of samples, including adolescents, older adults, psychiatric patients and pregnant women^[23]. The MSPSS provides an assessment of three sub-scales of perceived social support: family (FA), friends (FR), and significant other (SO). Each item will be scored on a Likert scale ranging from 1 (Very strongly Disagree) to 7 (Very strongly Agree) to give a total score out of 84, with higher scores indicating greater social support. A cut-off score for service eligibility was set at 65 or less, as it was deemed indicative of sufficiently low levels of perceived social support to warrant intervention. Most questionnaires used to evaluate perceived social support were developed for English speaking populations. In this study, the translated version of MSPSS in Greek was used, which was done according to the guidelines for adapting instruments in multiple languages and cultures^[24].

The Maslach Burnout Inventory (MBI) is the most commonly used tool to self-assess whether you might be at risk of burnout^[25]. To testify the risk of burnout, the MBI explores three components: emotional exhaustion, depersonalization, and personal accomplishment. Each item will be scored on a Likert scale ranging from 0 (Never) to 6 (Every day). The emotional exhaustion subscale includes 9 items and describes feelings of being emotionally overextended. The depersonalization subscale has 5 items and describes a notion of detachment and the subscale of Personal accomplishment contains 8 items that describe a reduction of personal achievement^[21]. A high score in the first two sections and a low score in the last section may indicate burnout syndrome^[3]. The scale has been adapted to Greek population^[26].

Finally, demographic characteristics were recorded.

3.3 Procedure

An online form with demographics and questionnaires was created and posted on websites related to nursing. The form mentioned the purpose of the survey, the details and the form of consent. In this way anyone who wanted to answer and considered interest in the research went into this process.

3.4 Data analysis

A p-value of 0.05 or less will be considered to indicate statistical significance. All analyses were performed with the Statistical Package for the Social Sciences (SPSS 17.0 for Windows). Quantitative analysis of qualitative data was carried out through descriptive statistics. Spearman rho test was used to explore possible correlations between the dimensions of BMI and MSPSS.

4. Results

The results indicated that 0.8% were born in 1955, 8% between 1960 and 1970, 23.2% between 1971 and 1980, 36.8% between 1981 and 1990 and 23.2% between 1991 and 1999. 92% of the participants were women, while only 8% were men. According to the education level, 57.6% of the participants have a higher education degree, 24% have a

master's degree and 18.4% have completed high school (Table 1). Also, 24% have studied assistant nursery in high school, 5.6% have studied nursery in university and 70.4% in technical school. According to the marital status, 53.6% of the correspondents were single, 39.2% were married, 6.4% were divorced and 0.8% were widowed (Table 1).

Table 1: demographic characteristics of the participants

Gender	N	%
Man	10	8,0
Woman	115	92,0
Total	125	100,0
Education	N	%
Higher education	72	57,6
High school	23	18,4
Master	30	24,0
Total	125	100,0
Marital Status	N	%
Single	67	53,6
Divorsed	8	6,4
Married	49	39,2
Widowed	1	,8
Total	125	100,0
Responsible Position	N	%
Yes	43	34,4
No	82	65,6
Total	125	100,0

The results showed that 64% of the participants feel mentally exhausted from their job every day or usually, 48% of them feel empty, as if nothing has been left inside them, when they leave their work, 71.2% feel tired when they wake up in the morning and they have to face another day at work, 83.2% can easily understand how their patients feel about what's happening to them and 31.2% feel they behave impersonally in some patients as if they were objects. Furthermore, 27.6% of the participants said that it is usually very exhausting to work with patients all day, 96% claimed that they usually are very effective in dealing with their patients' problems, 68.8% usually feel exhausted from their job, 89.6% usually feel that they positively affect patients' lives through their work and 39.2% usually feel less sensitive to people since they started this job.

Also, the results presented that, 32.4% of them are usually concerned that slowly this job makes them emotionally tougher, 61.6% believe that it is their work with patients that fill them with strength and energy, 44% usually feel disappointed with their work, 91.2% usually think they're working hard on their job, 20% do not really care what happens to some of their patients and 25.6% claimed that it

usually makes them very intimate to be in direct contact with patients. According to the atmosphere with their patients, 88.8% of them said that they can usually create a comfortable atmosphere with their patients, 76% usually, at the end of the day, have a good mood that they worked closely with their patients, 75.2% usually feel they have accomplished many remarkable things in this job, 36.6% usually feel like they cannot stand it anymore, 70.4% usually are very confident about the problems that arise in their work and 18.4% think patients blame them that they do not care about some of their problems.

Finally, correlating the questions related to social support and the questions related to burnout syndrome, it can be seen that there is no significant relation between them, in the great majority, since $sig > 0,05$ (Table 2). However, there is a correlation among them between some questions. In the table below there seems to be a correlation with $0,038 < 0,05$ in the sixth question because $p < 0,05$. Participants who think that it is very exhausting to work with patients all day they can discuss their problems with their family. Also, this happens in the second question with $0,039 < 0,05$.

Table 2: Correlation between burnout syndrome and social support

		1.	2.	3.	4	5	6	7	8	9	10	11	12
1. I feel mentally exhausted from my work.	r	-	-	-	-	,016**	,044**	-	-	-	-	-	-
	P	,126**	,051**	,044**	,099**	,861	,625	,107**	,125**	,118**	,012**	,092**	,004**
2. I feel empty as if nothing has been left inside me, when I leave my work.	r	-	-	-	-	,095**	-	-	-	-	-	-	-
	P	,161**	,075**	,011**	,013**	,293	,652	,141**	,185**	,141**	,017**	,031**	,014**
3. I feel tired when I wake up in the morning and I have to face another day at work.	r	-	-	-	-	,021**	,052**	-	-	-	-	-	-
	P	,026**	,006**	,006**	,012**	,818	,566	,045**	,002**	,003**	,016**	,013**	,040**
4. I can easily understand how my patients feel about what's happening to them.	r	-	-	-	-	,117**	,118**	-	-	-	-	-	-
	P	,016**	,025**	,100**	,046**	,193	,189	,001**	,069**	,035**	,040**	,088**	,093**
5. I feel I behave impersonally in some patients as if they were objects.	r	-	-	-	-	,139**	,096**	,034**	-	,001**	-	-	-
	P	,004**	,087**	,006**	,037**	,123	,288	,709	,498	,994	,845	,197	,278
6. It is very exhausting to work with patients all day.	r	-	-	-	-	,006**	,005**	-	-	-	-	-	-
	P	,086**	,089**	,005**	,065**	,943	,959	,488	,038	,095	,769	,798	,707
7. I am very effective in dealing with my patients' problems.	r	-	-	-	-	,163	,031	,069	-0,067	,089	,105	,073	-0,003
	P	,127	,138	,066	,081	,070	,730	,447	,458	,326	,244	,418	,977
8. I feel exhausted from my job.	r	-0,071	-0,034	-0,071	-0,082	,021	,059	-0,062	-0,109	-0,059	,014	-0,036	,035
	P	,428	,707	,431	,366	,813	,514	,495	,227	,516	,873	,689	,697
9. I feel that positively affect patients' lives through my work.	r	-	-	-	-	-0,039	,079	,039	,204	,186	,081	,228	,012
	P	,024	,133	,200	,109	,667	,383	,666	,022	,037	,372	,010	,895
10. I feel less sensitive to people since I started this job.	r	-	-	-	-	-0,067	-0,019	-0,069	-0,100	-0,087	-0,021	-0,029	,026
	P	,017	-0,096	-0,010	-0,018	,458	,835	,445	,266	,335	,816	,752	,775
11. I am concerned that slowly this job makes me emotionally tougher.	r	-	-	-	-	-0,021	,156	,022	-0,194	-0,023	-0,157	-0,108	,065
	P	,024	-0,121	-0,144	-0,121	,178	,814	,806	,030	,797	,080	,231	,474
12. It is my work with patients that fills me with strength and energy.	r	-	-	-	-	,141	,201	,185	,223	,249	,095	,208	,120
	P	,183	,181	,191	,243	,117	,024	,039	,013	,005	,294	,020	,182
13. I feel disappointed with my work.	r	-0,082	-0,075	-0,063	-0,013	-0,094	,028	-0,109	-0,134	-0,124	-0,041	-0,088	,022
	P	,363	,404	,482	,885	,296	,758	,226	,136	,167	,650	,331	,806
14. I think I am working hard on my job.	r	-	-	-	-	,057	,033	-0,026	,023	-0,017	,027	,070	,027
	P	,107	,074	,036	-0,027	,528	,719	,775	,798	,855	,765	,436	,768
15. In fact I do not care what happens to some of my patients.	r	-0,079	-0,191	-0,100	-0,176	-0,097	,049	,002	-0,266	-0,025	-0,174	-0,172	,029
	P	,384	,033	,266	,050	,279	,589	,980	,003	,779	,052	,054	,748
16. It makes me very intimate to be in direct contact with patients.	r	-	-	-	-	,157**	,030**	-0,052	-	-	,140	,007**	,001**
	P	,017	,028**	,030**	,093	,081	,742	,561	,346	,306	,119	,940	,989
17. I can create a comfortable atmosphere with my patients.	r	-	-	-	-	,135	,076**	,056**	-0,010	,152**	,057**	,069	,023**
	P	,042**	,117	,082**	,038**	,133	,397	,538	,916	,091	,527	,442	,803
18. At the end of the day, I have a good mood that I worked closely with my patients.	r	-	-	-	-	-	,111	,123**	,138**	,238	-	,191**	,075
	P	,104**	,149**	,079	,179**	,074**	,216	,172	,124	,007	,474	,033	,406
19. I feel I have accomplished many remarkable things in this job.	r	-	-	-	-	-	,283**	,286**	,277**	,350**	,079**	,329**	,169**
	P	,181**	,161**	,190**	,263**	,012**	,895	,001	,001	,002	,000	,378	,000
20. I feel like I cannot stand it anymore.	r	-	-	-	-	,015**	-	-	-	-	-	-	-
	P	,043**	,069**	,074**	,054**	,002**	,094**	,094**	,098**	,003**	,129**	,036**	,036**
21. I am very confident about the problems that arise in my work.	r	-	-	-	-	-	-	-	-	-	-	-	-
	P	,033**	,029**	,064**	,078**	,077**	,012**	,032**	,143**	,061**	,087**	,067**	,066**
		,719	,752	,477	,389	,391	,890	,721	,111	,497	,335	,460	,466

22. I think patients blame me that I do not care about some of their problems.	r	-,004**	-,023**	-,118**	-,096**	,191**	,200**	,095**	-,121**	-,071**	-,069**	-,135**	,050**
	P	,969	,798	,190	,288	,033	,026	,294	,179	,430	,445	,132	,582

5. Discussion

The average age of the respondents was 31.3 years. Of the participants, 115 were women and 10 were men. As for the level of education, the nursing workers who participated in the survey were mostly graduates of higher education. Nurses had an average of 9.9 years of experience with a range of 0-30 years.

International literature notes a tendency for nurses to leave the profession due to conditions and working hours, and stresses the urgent need to find solutions to address this problem [27, 28, 29]. The exhausting program and many hours of work are also highlighted in this research, where many nurses work for over 40 hours a week and they note that they feel mentally exhausted by their work.

Investigation and qualitative assessment of respondents' answers to the occurrence or not of physical and psychological symptoms leads to the conclusion that almost all participants in the study reported the occurrence of physical and psychological symptoms similar to those related to the professional burnout syndrome reported [30, 31]. These symptoms are emotional exhaustion, where the worker feels mentally empty, depersonalization, where the worker develops a defense mechanism to deal with the emotional exhaustion experienced, and feelings of reduced personal achievements gained as a result of the two feelings above.

Moreover, social support plays an important role in health and has been examined by many researchers. Social support is any type of communication that helps individuals feel more comfortable with a situation and feel that they have control of it. There are five types of social support which are emotional support, esteem, information, network and tangible support [8]. Social support has many benefits in psychological and physical health and does not only help individuals to feel better or cope with challenges but leads them to improve their overall well-being. Social support can be obtained from coworkers, spiritual advisors, friends, family, members of one's community or neighborhood and health care personnel [11]. The great majority of the participants in the current research said that they have a person to stand by them and help them when they need it, so they have strong social support, but there is no correlation between this and their emotional and physical situation, therefore our hypothesis is rejected.

A recent study in Swedish healthcare workers discriminated that anxiety, sleep disturbance, neck and pack pain, memory impairment and self-reported depression are associated with burnout syndrome [17]. A research among Iranian nurses correlates burnout with productivity and found that personal accomplishment and productivity have a positive correlation in contrast with depersonalization and emotional exhaustion [18]. Unlikely, a study among Hungarian health care staff showed higher scores in emotional exhaustion and depersonalization than personal accomplishment [19]. Participants in our survey claimed that they feel exhausted, empty and tired and they sometimes deal with the patients like they are objects.

6. Conclusions

The debilitating project and numerous hours of work are additionally highlighted in this study, where many medical attendants take note of that they feel rationally depleted by their work. Social support plays an important role in health but in our study, the correlation among them is rejected, so it would be interesting to carry out further studies.

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8. References

- Schaufeli W, Greenglass E. Introduction to special issue on burnout and health. *Psychology and Health*. 2001; 16:501-510
- Anagnostopoulos F, Papadatou D. Paragontiki sinthesi kai esoteriki sinoxi tou erotimatologiou katagrafis epaggelmatikis eksouthenosis se deigma nosileutron. *Psixologika Themata*. 1992; 5(3):183-202
- Fradelos E, Mpelegrinos S, Mparo Ch, Vassilopoulou Ch, Argyrou P, Tsironi M *et al*. Burnout syndrome impacts on quality of life in nursing professionals: The contribution of perceived social support. *Progress in health sciences*. 2014; 4(1):102-109
- Halbesleben JRB. *Handbook of stress and burnout in health care*. Nova Science Publishers, New York, 2008, 111-125
- Korcak D, Kister C, Huber B. Differential diagnostic of the burnout syndrome. *GMS Health Technology Assessment*. 2010; 6:1-9
- WHO. The Ottawa Charter for Health Promotion. Available at <https://www.who.int/healthpromotion/conferences/previ-ous/ottawa/en/> access 17/11/2019
- Ewald O. Das Burnout-Syndrom. *Ergo Med*. 1997; 21:93-96
- Schaefer C, Coyne JC, Lazarus RS. The health-related functions of social support. *Journal of Behavioral Medicine*. 1981; 4(4):381-406
- Southwick SM, Vythilingam M, Charney DS. The psychobiology of depression and resilience to stress: Implications for prevention and treatment. *Annu Rev Clin Psychol*. 2005; 1:255-91
- Uchino BN, Cacioppo JT, Kiecolt-Glaser JK. The relationship between social support and physiological processes: A review with emphasis on underlying mechanisms and implications for health. *Psychol Bul*. 1996; 119(3):488-531
- Patel SS, Peterson RA, Kimmel PL. Psychosocial factors in patients with chronic kidney disease: The impact of social support on End-Stage renal disease. *Seminars in Dialysis*. 2005; 18(2):98-102
- Harris I, Winskowski AM, Engdahl BE. Types of workplace social support in the prediction of job satisfaction. *The Career Development Quarterly*. 2007; 56(2):150-156
- Chiaburu DS, Harrison DA. Do Peers Make the Place?

- Conceptual Synthesis and Meta Analysis of Coworker Effects on Perceptions, Attitudes, OCBs, and Performance. *Journal of Applied Psychology*. 2008; 93(5):1082-1103
14. Brough P, Frame R. Predicting police job satisfaction and turnover intentions: the role of social support and police organisational variables. *New Zealand Journal of Psychology*. 2004; 33(1):8-16
 15. Cartwright L. Occupational stress in women physicians. In: RLPayne, J Firth-Cozens (eds). *Stress in Health Professionals*. Chichester: Wiley, 1987.
 16. Woodhead EL, Northrop L, Edelstein B. Stress, Social Support, and Burnout among Long-Term Care Nursing Staff. *Journal of Applied Gerontology*. 2014; 35(1):84-105
 17. Peterson U, Demerouti E, Bergstrom G, Samuelsson M, Asberg M, Nygren A. Burnout and physical and mental health among Swedish healthcare workers. *Journal of Advanced Nursing*. 2008; 62(1):84-95.
 18. Nayeri ND, Negarandeh R, Vaismoradi M, Ahmadi F, Faghihzadeh S. Burnout and productivity among Iranian nurses. *Nursing and Health Sciences*. 2009; 11(3):263-270
 19. Piko B. Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: A questionnaire survey. *International Journal of Nursing Studies*. 2006; 43(3):311-318.
 20. Bakker AB, Killmer CH, Siegrist J, Schaufeli WB. Effort – reward imbalance and burnout among nurses. *Journal of Advanced Nursing*. 2000; 31(4):884-891
 21. Burke RJ, Moodie S, Dolan S, Fiksenbaum L. Job demands, social support, work satisfaction and psychological well-being among nurses in Spain. Esade. 2012. Available at http://proxmy.esade.edu/gd/facultybio/publicos/1351517321046Job_demands_social_support_work_satisfaction_and_psychological_well_being_among_nurses_in_Spain.pdf access 17/11/2019
 22. Canty-Mitchell J, Zimet GD. Psychometric properties of the Multidimensional Scale of Perceived Social Support in urban adolescents. *American Journal of Community Psychology*. 2000; 28(3):391-400
 23. Stanley MA, Beck JG, Zebb BJ. Psychometric properties of the MSPSS in older adults. *Aging & Mental Health*. 1998; 2(3):186-193.
 24. Theofilou P. Translation and cultural adaptation of the Multidimensional Scale of Perceived Social Support for Greece. *Health Psychology Research*. 2015; 3(1):1061
 25. Maslach C, Jackson SE. *Maslach burnout inventory*. Research Edition. Palo Alto, CA: Consulting Psychologists Press, 1981.
 26. Anagnostopoulos F, Papadatou D. Factor synthesis and internal consistency of the log questionnaire of burnout in a sample of nurses. *Psychological Issues*. 1992; 5:183-202
 27. Vahey DC, Aiken LH, Sloane DM, Clarke SP, Vargas D. Nurse burnout and patient satisfaction. *Med Care*. 2004; 2:I 157-66.
 28. Freudenberger HJ. Staff Burnout. *Journal of Social issues*. 1974; 30:159-165
 29. Whippen D, Canellos GP. Burn out syndrome in the practice of oncology: Results of a random survey of 1.000 oncologists. *Journal of Clinical Oncology*. 1991; 9(10):1916-1921
 30. Poncet MC, Toullic P, Papazian L, Kentish-Barnes N, Timsit JF, Pochard F. Burnout Syndrome in Critical Care Nursing Staff. *American Journal of Respiratory and Critical Care Medicine*. 2007; 175(7):698-704
 31. Jaracz K, Gorna K, Konieczna J. Burnout, stress and styles of coping among hospital nurses. *Roczniki Akademii Medycznej w Białymstoku*. 2005; 50(1):216-9