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Research Article

Demographic and Occupational Factors Affecting Fatigue and Social Support among Nurses in the Emergency Department: A Cross-Sectional Study

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Abstract

The aim of the present study is the investigation of the levels of fatigue and social support in nursing staff working in the Emergency Department of General Hospitals in the broader area of Athens. Moreover, the impact of demographic and occupational factors on fatigue and social support was examined. This is a quantitative cross-sectional study including 62 nurses who completed the Fatigue Assessment Scale (FAS) and the Multidimensional Scale of Perceived Social Support (MSPSS). Based on the results, males presented higher score of mental fatigue compared to females (p=0,015) while nurses with master or PhD degree appeared to have more support from their family in comparison to those with lower educational level (p=0,040). Further, the results demonstrated a statistically significant and negative correlation between working hours per week and the perceived social support from friends (r= -0,302, p=0,021) as well as the total social support (r= -0,296, p=0,024). The findings show that there is a strong effect of demographic and occupational factors on fatigue and social support among nurses.

Keywords: Fatigue; Social support; Nurses; Emergency department

Introduction

Fatigue is described as a state of sleepiness arising from the physiological mechanisms associated with sleep and the circadian rhythm that affect the individual's response to psychosomatic needs. This condition usually results from physical and mental disorders, stress and overwork. For this fatigue is defined as the inability to maintain the required or expected endurance and energy or the lack of energy in the capacity to work. Working with fatigue is even equated with alcoholism [1]. Social support has been defined as the actual or perceived availability of helpful behaviors from others. Higher levels of peer support were associated with lower levels of nurses' emotional exhaustion, and higher stress scores were related to higher levels of depersonalization for staff who reported high levels of social support, but not for those who reported low levels of support. Socially supportive behaviors are associated with work engagement and decision making by nursing units. Perceived organizational support is related to nurses' health and job satisfaction.

The profession practiced by the nursing staff is a profession of providing care, which requires not only mental and emotional effort but also physical effort, always having as the main priority the satisfaction of the patient's needs, his physical care and his psychological support [2]. In order to successfully practice this profession, it is important for nursing staff to have the appropriate cognitive, technical and interpersonal skills. In addition, interaction and continuous communication with the patient is a basic condition. This results in the quality of nursing services being influenced to a decisive extent by the level of staffing and the general working conditions that prevail in the Hospital [3]. According to the literature, some of the determining factors of working conditions are the equipment, the quality condition of the buildings, the staffing with human resources and the logistical infrastructure of the workplaces. The main element that characterizes the quality of the working environment is directly linked to the quantitative and qualitative composition of the nursing staff. The quantitative composition is determined by the nurse-to-patient ratio and the qualitative by the educational level [4,5].

A study by Alikhalafi, YaldaTangestani and Shima Osanloo[6] investigated the relationship between job stress and social support in hospital nurses in Tehran. 125 people were selected by stratified sampling. Data from questionnaires on job stress, burnout, social support as well as demographic data were collected and analyzed using statistical techniques, regression, analysis of variance and Tukey's statistical test. The results showed that social support was a predictor of workplace stress and burnout. In another research by Saeed Ariapooran [7], the determination of the prevalence of fatigue and burnout symptoms and the role of perceived social support in predicting these symptoms in Iranian nurses was studied. The results obtained showed that the prevalence of symptoms of fatigue and burnout were 45.3% and 15.03%, respectively. Social support (significant others, family and friends) was negatively associated with burnout ($p<0.01$). Also, there was a negative correlation between social support from family and fatigue ($p<0.01$). According to hierarchical multiple regressions, social support from family was a significant predictor for the occurrence of fatigue ($p<0.005$) and burnout ($p<0.001$). In the study prepared by Fradelos et al., [8] regarding quality of life and fatigue in nursing staff as well as the effect of social support, the results showed that there is a correlation between fatigue, quality of life and social support. Social support

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and socio-demographic factors seem to influence the fatigue levels of nurses working in Psychiatric and General Hospitals. In a study by Maureen Harkin and Vidar Melby [9] on burnout in the Emergency Department nurses and clinical nurses, statistical analysis showed no significant difference in levels of emotional exhaustion, depersonalization or personal achievement between clinics of nurses and nurses working in the Emergency Department. Work-related factors and personal factors of gender, age, marital status and number of hours worked per week were significant (p<.05) in their association with occupational fatigue. In the research conducted by Zahra Pourmovahed and KhadijehNasiriani [10] regarding the perception of fatigue in female nurses, the total score of fatigue was 30.78±7.90. There was a statistically significant difference between employment status (p = 0.01), spousal support (p = 0.00), age (p = 0.008) and work experience (p = 0.02) on one side, and fatigue. In research by ErinL [11]. Results showed that job demands (higher job stress) were associated with more emotional exhaustion, more depersonalization, and less personal accomplishment. Job resources (support from supervisors and friends or family members, reassurance of value, opportunity for growth) were related to less emotional exhaustion and higher levels ofpersonal fulfillment.

Despite the fact that surveys have been prepared regarding the levels of fatigue and social support in nursing staff, the number of surveys that have been carried out in Greece is limited, especially regarding nurses employed in the Emergency Department. The aim of the present study is the investigation of the levels of fatigue and social support in nursing staff working in the Emergency Department of General Hospitals in the broader area of Athens. Moreover, the impact of demographic and occupational factors on fatigue and social support was examined.

Method

Research design

This is a quantitative cross-sectional study. The independent variables investigated are the demographic and occupational factors (e.g., gender, age, marital status, working hours per weeketc.) and thedependent variables are social support and fatigue.

Sample

Nursing staff working in public General Hospitals in the broader area of Athens and in particular in the Emergency Department participated in the present research. For the selection of the sample, the following inclusion criteria were set: 1. Persons aged >18 years, 2. Nursing staff of University, Technological and Secondary Education categories, 3. Nursing staff working > 1 year, 4. Nursing staff who know the Greek language. The main exclusion criterion was the existence of apsychiatric disorder in the sample.

Questionnaires

First, respondents were given a form with their demographic and professional information. Participants then completed The Fatigue Assessment Scale (FAS). This questionnaire is a tool for assessing perceived fatigue. It consists of 10 questions on a five-point Likert scale (1=never to 5=always), with a score ranging from 10-50. Five questions concern physical and 5 questions mental fatigue. At the same time, the specific scale is considered as a tool, which evaluates fatigue as a one-dimensional experience [12]. This scale is considered a reliable tool for measuring fatigue both for healthy people and for people dealing with diseases [13]. Research participants are categorized as "not fatigued" if the FAS score is below 22, "fatigued" if the FAS score is greater than or equal to 22, and "extremely fatigued" if the FAS score is greater than or equal to 35 [12]. Finally, subjects also completed the Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS provides an assessment of three sources (subscales) of social support: Family (FA), Friends (FR), and Significant Others (SO). Each item is rated on a scale ranging from 1 (Strongly disagree) to 7 (Strongly agree) with higher scores indicating greater social support. The cutoffscore was set at 65 or less as it was considered indicative of sufficiently low levels of social support uptake [14-17]. Zimet and colleagues have argued for the unique characteristics of this scale [18,19]. First, it is short (12 items in total) and is ideal for (a) research that requires assessment of multiple variables and (b) populations that, for one reason or another, cannot administer a large questionnaire [20]. Second, a related point to the above item is that the MSPSS propositions are easy to understand and therefore suitable for young or low-literacy populations. Third, despite being a brief instrument, the MSPSS measures support from three sources [20]. The MSPSS was found to have good internal reliability across subject groups [21,17].

Procedure

All research participants were informed about the purpose of the work through the consent form they were asked to sign and that they could withdraw at any time during the research. Anonymity of the participants as well as confidentiality of the data was ensured. Relevant permission for the collection of data was requested from the scientific councils of the Hospitals. Completing the questionnaires took about 10 minutes while the data collection took place in Februaryand March 2020.

Statistical analysis

The socio-demographic profile of the sample was presented and in particular the quantitative variables were described with mean and standard deviation (M±SD) and the categorical variables with frequencies and percentages (%). A Kolmogorov-Smirnov test for sample normality was performed. To study the effect of the demographic and occupational factors on the levels of fatigue and social support, parametric and non-parametric tests were performed.

Results

Sixty-two nurses participated in the research, with an average age of 42.55±7.82 years of life.Demographic and work characteristics of the sample are presented in detail in Table 1.

Table 2 shows the ranking of the participants based on their score on the FAS scale.Most participants (n=51, 82.3%) reported high levels of fatigue (≥22). The descriptive characteristics of the scales are presented in Table 3. Fatigue reached a total of 26.61, while social support reached a total of 5.54.

Regarding the levels of fatigue and social support in relation to the variable of gender, differences between males and femalesnurses took place only in mental fatigue with the males presenting higher score compared to females (42,64 versus 28,44, p=0,015).

As far as education is concerned, those with higher level (Master/

Table 1: Demographic and occupational characteristics of the participants.

		n		%	
Gender	Male	11		17,7	
	Female	50		80,6	
Education	High school	2		3,2	
	Lyceum	18		29,0	
	University/Technological education	36		58,1	
	Master/PhD	6		9,7	
Marital status	Single	18		29,0	
	Married	37		59,7	
	Divorced	7		11,3	
Position of responsibility	Yes	11		17,7	
	No	50		80,6	
			Mean		Standard deviation
Age			42,55		7,82
Total service in the hospital (years)			39,00		9,76
Years of work at the Emergency Department			33,00		8,47

Table 2: Ranking of participants according to their score on the Fatigue Assessment Scale (FAS).

	n	%
Non fatigued(< 22)	9	14,5
Fatigued(≥ 22)	51	82,3
Extremely fatigued(≥ 35)	2	3,2

Table 3: Descriptive characteristics of "The Fatigue Assessment Scale" (FAS) and "The Multidimensional Scale of Perceived Social Support" (MSPSS).

	Minimum value	Maximum value	Mean	Standard deviation
Total score FAS	19,00	48,00	26,61	5,09
Physical fatigue	10,00	23,00	14,03	2,763
Mental fatigue	8,00	25,00	12,58	2,97
Total score MSPSS	1,83	7,00	5,54	1,18
Significant others	1,75	7,00	5,62	1,30
Family	1,75	7,00	5,76	1,30
Friends	2,00	7,00	5,26	1,27

PhD) indicated higher score of social support from family (46,75) in comparison to high school (7,50), Lyceum (29,14) and University and Technological Education (31,47) (p=0,040).

Also, those nurses with the lowest educational level tended to present the highest score of mental fatigue (46,50) compared to the lyceum graduates (35,94), University and Technological Education graduated (31,24) and those with master or PhD (14,75) (p=0,050).

As far as marital status is concerned, divorced nurses presented more physical fatigue (43,43) compared to singles (35,31) and married (27,39) (p=0,050).

Moreover, the results showed a statistically significant and negative correlation between working hours per week and the perceived social support from friends (r= -0,302, p=0,021) (Table 4) as well as the total social support (r= -0,296, p=0,024).

The results demonstrated no effect on the levels of fatigue and social support of the variables of age, total service (years), years of work at the emergency department as well as position of responsibility (p>0,05).

Discussion

The aim of the present study is the investigation of the levels of fatigue and social support in nursing staff working in the Emergency Department of General Hospitals in the broader area of Athens. Moreover, the impact of demographic and occupational factors on fatigue and social support was examined.

A general conclusion is that it seems a large number of nurses are experiencing fatigue. This finding is in complete agreement with the others of similar studies [22,23]. In particular, nurses in various units are duty bound to provide care to patients in settings associated with complex care and impending death. They also face death and grief situations on daily basis, and are at risk of becoming more susceptible to psychological repercussions and stress, frequently occasioning in emotional exhaustion.

Regarding the impact of sociodemographic and occupational factors on fatigue and social support, males seem to be more fatigued mentally compared to females while nurses with master or PhD degree appear to have more support from their family in comparison to those with lower educational level. Also, those nurses with the lowest educational level tended to present the highest score of mental fatigue compared to the lyceum graduates, University and Technological Education graduated and those with master or PhD. As far as marital status is concerned, divorced nurses presented more physical fatigue compared to singles and married. Further, the findings show a strong correlation between working hours per week and the perceived social support from friends as well as the total social support which means that the longer a nurseworks per week, the less social support he/she receives.

The strong effect of demographic and occupational characteristics is presented in relevant studies too. More specifically, in the study prepared by Fradelos et al.,[8] regarding quality of life and fatigue in nursing staff as well as the effect of social support, the results showed that there is a correlation between fatigue, quality of life and social support. Social support and socio-demographic factors seem to influence the fatigue levels of nurses working in Psychiatric and General Hospitals. In a study by Maureen Harkin and Vidar Melby., [9] on burnout in the Emergency Department nurses and clinical nurses, statistical analysis showed no significant difference in levels of emotional exhaustion, depersonalization or personal achievement between clinics of nurses and nurses working in the Emergency Department. Work-related factors and personal factors of gender, age, marital status and number of hours worked per week were significant in their association with occupational fatigue. In the research conducted by Zahra Pourmovahed and KhadijehNasiriani [9]. There was a significant difference between employment status, spousal support, age and work experience on one side, and fatigue.

Regarding the limitations of the present research, it is noted that the results obtained from this study can be further investigated in larger samples from other hospital contexts, private and/or public, giving

Table 4: Correlation between social support from friends and total service, years of work at the emergency department as well as working hours per week.

		Total service	Years of work at the emergency department	Working hours per week	MSPSSFRIENDS
Total service (years)	Pearson Correlation	1	,678**	-,006	-,072
	Sig. (2-tailed)		,000	,966	,587
	N	61	61	59	60
Years of work at the emergency department	Pearson Correlation	,678**	1	,003	-,029
	Sig. (2-tailed)	,000		,979	,825
	N	61	61	59	60
Working hours per week	Pearson Correlation	-,006	,003	1	-,302*
	Sig. (2-tailed)	,966	,979		,021
	N	59	59	59	58
MSPSSFRIENDS	Pearson Correlation	-,072	-,029	-,302*	1
	Sig. (2-tailed)	,587	,825	,021	
	N	60	60	58	61

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

the possibility to control the variables under study, to compare the results, so that more reliable conclusions can be drawn. Additionally, in this study only the effect of social support and educational category of the nursing staff on fatigue levels was investigated. In future researchthere may be the possibility of investigating other variables/ factors.

Preventive actions of nurses' fatigue should be carried out at three levels: organizational level, individual-organizational level and individual level. At the organizational level, the following are important: recruiting new employees taking into account the requirements for the performance of the specific work, learning new skills, acquiring knowledge both professional and applicable to deal with stress, improving physical and psychosocial working conditions, improving of communication and cooperation, organization, improvement in work control, utilization of skills. At the individual-organizational level, it is essential to seek the promotion of support from superiors and colleagues, matching individual opportunities and employment requirements, clarifying roles. At the individual level, the following are important: development of relaxation skills in stressful situations, self-improvement, nurses learning to recognize and manage their mental state, ability to accept and modify unpleasant experiences, and development of the ability to delegate, negotiate as well as setting goals. These perspectives are expected to lead to an improvement inthe quality of care provided.

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