

ORIGINAL PAPER

Investigation of Anxiety and Burn-Out in Medical and Nursing Staff of Public Hospitals of Peloponnese

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Abstract

Background: Nowadays, anxiety and burnout of medical and nursing staff is identified more and more as one of the factors that affect aspects of their personal and professional life.

Aim: The aim of this research study was to investigate the self-evaluation of anxiety and burnout in medical and nursing staff of public hospitals in Peloponnese.

Methodology : Two questionnaires were given to a sample of 284 doctors, nurses and assistant nurses from two hospitals: the “State-Trait Anxiety Inventory” (STAI) by Spielberger and the Maslach Burnout Inventory (MBI) that assesses the three dimensions of burnout: emotional exhaustion, depersonalization and lack of personal fulfillment. The statistical analysis was performed using the statistical package SPSS, version 19.0. The level of statistical significance of the results was $p < 0.05$.

Results: Doctors and nurses are dominated by moderate emotional anxiety and increased burnout. The stressful situation seems to be interpreted mainly in the light of a dynamic interaction between the person and the working environment. The adverse working conditions, that characterize the health sector, seem to intensify the stress and overwhelm them emotionally and professionally.

Conclusions: The anxiety and burnout of doctors, nurses and assistant nurses working at both hospitals is increased and expressed with feelings of depersonalization and emotional exhaustion. The formulation of a program of emotional support and strengthening of medical and nursing staff is required.

Key Words: Anxiety, burnout, emotional exhaustion, personal fulfillment, depersonalization, doctors, nursing staff.

Introduction

According to Manos (Manos, 1997) anxiety is defined as: "*the unpleasant emotional status that includes feelings of tension, fear or even terror in response to risk whose source is largely unknown or unidentified*". The word anxiety is used to indicate a range of complex emotional states caused by actual or hypothetical threats. These threats can be external or internal (Beyer & Leven, 1987). Anxiety is a "*form of overreaction at stressful events*" (Mitrousi et al., 2014). Many factors are involved in mobilization of anxiety such as biological or mental factors. Mental factors can be the relationship with others or with oneself or the social environment (Mitrousi et al., 2013b). Anxiety is a normal response of human to environmental stimuli and prepares the subject to act in order to cope with threatening situations. In excessive grade, anxiety is an unhealthy expression that disrupts the adaptive capacity of human (Zyga et al., 2013; Mitrousi et al., 2014).

Medical and nursing jobs are included among the most stressful jobs (Mitrousi et al., 2014). Burnout comes from environmental factors such as lack of the staff, exhausting shifts, lack of autonomy and authority, the increased demands of patients and their relatives, lack of support from supervisors and colleagues, use of technology and, finally, frequent exposure to death (Malliarou, 2012). Among individual characteristics personality of the worker, motives that led someone to choose profession, one's expectations of the job and the way of perceiving and reacting to stressful situations are included (Adali & Lemonidou, 2001; Zyga, 2013; Akansel et al, 2012, Bellali et al., 2007).

The syndrome of burnout is characterized by three dimensions: emotional exhaustion, depersonalization and a reduction of personal fulfillment in individuals' work (Maslach et al., 1996). Emotional exhaustion is characterized by lack of energy. The sense that the individual's emotional reserves are exhausted dominates so there are no sources of renewal. Depersonalization measures an unfeeling and impersonal response toward recipients of one's service, care treatment, or instruction. Personal fulfillment measures

feelings of competence and successful achievement in one's work (Halbesleben & Buckley, 2004).

Aim

The aim of this study was to investigate the self-evaluation of anxiety and burnout in medical and nursing staff (MNS) of two major hospitals in the prefecture of Achaia, General Hospital Saint Andrew and 409 Military Hospital.

Methodology

The study involved 284 professionals from two hospitals in the city of Patras. Of these, 92 (32.4%) were working in 409 Military Hospital while the other 192 (67.6%) were working at the Hospital of Saint Andrew. The sample selection was made by the method of random sampling. The inclusion criteria were: i) be physicians of all specialties ii) be nurses and assistant nurses coming from all nursing departments and units iii) have duties and responsibilities directly related to the patient.

The survey was conducted from 1 January 2013 to 31 March 2013 and included the voluntary and anonymous participation of medical and nursing staff. The psychometric tools included in the study are presented below:

Instruments

For recording demographic characteristics of MNS a suitable questionnaire was formed. The questionnaire included, also, data related to the working conditions such as the educational level of the staff, the clinical department of occupation, years of professional experience and the percentage of patients in each shift.

For the measurement of anxiety, the **Questionnaire State – Trait Anxiety Inventory (STAI)** of Spielberger (Spielberger, 1972, 1983) was used. This scale consists of 40 items and is divided to two subscales: i) the first 20 questions describe the emotional state of the individual at the time of the study (i.e. the transient stressful emotional state) ii) the remaining 20 items deal with the feeling status of the subject the last days (the permanent emotional state of the subject).

The answers of the first part are classified into: not at all, somewhat, moderately, and very much. For the second part answers are classified as: almost never, sometimes, often and almost always. Each question is scored from 1-4 and the score of the test ranges from 20-80 (Gros et al., 2007). The higher the score the highest is the level of anxiety. The scale has been adapted to Greek population with sufficient internal consistency and construct validity (Liakos & Giannitsis, 1984; Anagnostopoulou, 2002).

The **Maslach Burnout Inventory (MBI)** (Maslach & Jackson, 1986) is consisted of 22 questions that assess the three dimensions of burnout: emotional exhaustion (EE) (9 items), depersonalization (DE) (5 items) and lack of personal fulfillment (LPF) (8 items). Emotional exhaustion depicts the physical and mental exhaustion during the performance of work. Depersonalization depicts the impersonal, alien and cynical attitude of staff towards patients. Lack of personal fulfillment depicts the level of achieving the objectives and ambitions on a personal level. Participants were asked to answer on a 7-point Likert-scale ranging from 0 (never) to 6 (daily). The scale has been adapted to Greek population (Anagnostopoulos & Papadatou, 1992).

The statistical analysis was carried out using the statistical package IBM SPSS 19.0. Descriptive statistics was used for quantitative analysis of qualitative data. Parametric tests such as student test and analysis of variance (ANOVA) was used for inductive analysis. Chi-square test (χ^2) was used for the analysis of qualitative variables. The level statistical significance was set at 0.05.

The process of the survey began with the approval of the Board and Scientific Council of the two Hospitals included. According to the ethical standards of the Helsinki Declaration all participants were informed about the anonymity, the safety of the material and their rights to refuse or stop the participation in the study.

Results

Subjects were nurses (n=91), assistant nurses (n=106) and doctors (n=84). Of these, 23.6% (n=67) were male while 76.4% (n=217) were women. The mean age of subjects was 45.20 years old with a standard deviation of 8.59. Of the 284 participants, 206 (72.5%) were married, 133 (46.8%) had two children. Regarding the educational level, 106 (37.3%) were assistant nurses (secondary school graduates), 83 (29.2%) were graduates of Technological Educational Institute (TEI), 55 (19.4%) were graduates of University and 14.1% (n=40) had a master's degree.

As far as the professional status is concerned, 253 (89.1%) participants were state employees, while 31 (10.9%) was contract staff. Contract staff was consisted from specializers' doctors. The average working time in the service was 16.35 years (SD: 8.68). The average of work in the current clinic was 14.04 years (SD: 7.99). The average value of the average number of patients allocated to each worker is 21.62 (SD: 14.81).

Regarding the correlation between anxiety and demographic characteristics, it was found that gender correlates with both anxiety dimensions. Women seem to have higher rates of transient (mean: 56.43) and permanent anxiety (mean=54.14) compared to men (mean of transient =51.94, mean of permanent =51.81). Also, respondents with more than one child seem to have significantly more transient anxiety (mean with two children= 56.89, mean with over 2 children= 55.91) than others (mean with no child= 53.19 and mean with one child= mean 53.25). The educational level seem to correlates statistically significant with the level of anxiety as nurses who are TEI graduates or secondary school graduates have higher permanent anxiety (mean for TEI graduates= 58.39 mean for secondary school= 56.42) compared to the University graduates (mean= 52.84) and those with postgraduate degree (mean=50.85) (Table 1).

Table 1: Differences in dimensions of transient and permanent anxiety of Medical & Nursing Staff according to their demographic characteristics

Demographic characteristics of MNS		Transient	Permanent
		Mean	Mean
Gender	Males	51.94	51.81
	Females	56.43	54.14
	<i>p-value</i>	.0005*	.034*
Marital Status	Unmarried	54.41	53.55
	Married	55.88	53.73
	Widowed/ Divorced	53.38	52.69
	<i>p-value</i>	0.239	0.804
Children	0	53.19	51.93
	1	53.25	53.50
	2	56.89	54.44
	>3	55.91	53.72
	<i>p-value</i>	.012*	0.205
Be responsible for children	No	54.86	53.85
	Yes	56.13	53.22
	<i>p-value</i>	0.224	0.512
Educational Level	Secondary School	56.42	54.02
	Technological Educational Institute	58.39	55.97
	University	52.84	52.85
	Master degree	50.85	51.08
	<i>p-value</i>	.0005*	0.099

* Statistically significant differences at level $\alpha = 0.05$

Table 2: Differences in dimensions of transient and permanent anxiety of ac Medical & Nursing Staff according to the service characteristics

Service characteristics of MNS		Transient	Permanent
		Mean	Mean
Hospital	409 Military Hospital	48.95	49.66
	St. Andrew Hospital	58.45	55.47
	<i>p-value</i>	.0005*	.0005*
Professional status	State employee	55.74	53.84
	Contract staff	52.39	51.55
	<i>p-value</i>	.041*	0.191
Job position	Doctor	51.39	51.48
	Nurse	57.96	55.02
	Assistant nurse	56.28	54.03
	<i>p-value</i>	.0005*	.009*

* Statistically significant differences at level $\alpha=0.05$

Table 3: Differences in dimensions of burnout s of MNS according to the service characteristics

Service characteristics of MNS		Emotional exhaustion	Lack of Personal fulfillment	Depersonalization
		Mean	Mean	Mean
Hospital	'409' Military Hospital	32.08	25.82	12.76
	St. Andrew Hospital	36.39	22.63	16.53
	<i>p-value</i>	.0005*	.0005*	.0005*
	Professional status	State employee	35.20	23.40
	Contract staff	33.29	25.81	14.90
	<i>p-value</i>	0.203	0.075	0.618
Job Position	Doctor	33.04	24.57	14.54
	Nurse	36.25	24.42	15.46
	Ass. Nurse	35.44	22.32	15.78
	<i>p-value</i>	.019*	.043*	.189*
Low: EE<20. Medium: 20-31 High: EE>31				
Low: LPF >42. Medium: 35-42 High: LPF<35				
Low: DE <5 Medium: 5-11 High: DE>11				

* Statistically significant differences at level $\alpha=0.05$

Table 4: Correlations between dimensions of anxiety and burnout in MNS (N=284)

Dimensions of anxiety emotional state	Emotional burnout		Personal fulfillment		Depersonalization	
	Correlation rate	p-value	Correlation rate	p-value	Correlation rate	p-value
Transient	0.636	.005*	-0.232	.005*	0.396	.005*
Permanent	0.655	.005*	-0.408	.005*	0.421	.005*

* Statistically significant differences at level $\alpha=0.05$

Regarding the correlation between anxiety and service characteristics, it was found that nursing staff had higher transient anxiety (mean for nurses: 57.96, mean for assistant nurses= 56.28) than doctors (mean=51.39). Similar are the results in the case of permanent anxiety (mean for nurses=55.02, mean for assistant nurses= 54.03, mean for doctors=51.48). Additionally, state employees have significantly more occasional anxiety (mean = 55.74) compared to contract staff (mean = 52.39). Finally, we found significant positive correlation between the average daily numbers of patients allocated to each employee with the transient anxiety emotional state of workers. In addition, years of service of employees do not seem to be significantly correlated with anxiety emotional state of employees (Table 2).

Comparing the transient anxiety and permanent emotional state of MNS we found that this is statistically significant (t-test dependent samples: $t = 5.3$, $df = 283$, $p < 0.001$). Specifically, MNS declare that they feel transient anxiety significantly stronger than permanent. Regarding the correlation between burnout and service characteristics, statistically significant differences of the dimensions of burnout according to the job position and the Hospital in which they work were found. In addition, both years of service and the average number of patients allocated to each one of their professionals were positively correlated with emotional exhaustion of workers in these two hospitals. Also, the average number of patients allocated to each one of the health professionals was positively correlated with depersonalization. These correlations are statistically significant (Table 3).

Finally, we observe that emotional exhaustion of MNS is positively correlated with the transient and characteristic anxiety emotional state of health professionals. Additionally, depersonalization of MNS is positively correlated with the transient and permanent anxiety emotional state of MNS. However, the personal fulfillment is negatively correlated with the occasional and

characteristic anxiety emotional state of health professionals. These correlations are statistically significant (Table 4).

Discussion

This study investigated the anxiety and burnout levels in a sample of 284 MNS in two hospitals of Patras. According to the results, both transient and permanent anxiety of MNS varies at moderate levels. However, MNS in this study stated that they experience more transient emotional anxiety than permanent.

In addition, the majority (80.3%) of MNS feel burnout. Specifically, the levels of emotional exhaustion (82.75%), depersonalization (88.38%) and fulfillment (90.49%) are increased according to their statements. MNS is possessed by feelings of mental and physical fatigue, as well as loss of energy and bad mood. Therefore, MNS feel emotionally "dried" and disappointed by the events of the day (Burke & Greenglass, 2001). At the same time, they remove and isolate from patients thus establishing impersonal, aggressive and cynical relations with them (Bellali et al., 2007). In addition, employees feel unable to offer in the workplace thus reducing the performance. Several studies (Toukas & Touka, 2011; Calzi et al., 2006; Kandri, Kalemi, Moschos, 2004) confirm the positive relationship of anxiety with the onset of burnout. In this study, it seems that age of MNS is not associated with transient or permanent anxiety emotional state. Age, also, is not associated with the dimensions of burnout. This finding differs from another study (Iglesias, Vallejo, Fuentes, 2010), according to which, age of MNS is associated with emotional exhaustion.

Women, according to their statements, seem to have significantly increased levels of transient and permanent anxiety than males. However, gender was not emerged as a factor associated with burnout as there was no statistically significant difference in rates of men and women. The lack of relationship between the dimensions of burnout and sex seems to agree with other studies (Glise,

Ahlborg, Jonsdottir, 2012; Dilintas, 2010). However, we must highlight that it is in contrast with the study of Maslach which supports that sex is one of the demographic factors associated with the phenomenon of burnout.

The family obligations of MNS increase their anxiety and, therefore, enhance their professional burnout. In particular, MNS with more than one child seems to have, according to their statements, significantly more transient anxiety and, significantly, higher emotional burnout than the MNS with less or no children. However, both the "increased" personal fulfillment and the "increased" depersonalization of MNS do not seem to depend on the number of children. These results appear to deviate to other studies (Pavlakis, Raftopoulos, Theodorou, 2010; Dilintas, 2010) but converge to the non-existence of a relationship with marital status.

The low level of education seems to be positively correlated with the phenomenon of burnout as well as with high levels of transient anxiety. This finding contrasts with the survey of Maslach (2003). It seems that high qualified nurses can manage cases effectively due to the increased level of knowledge.

Regarding job position, it seems that nurses possessed of higher transient and permanent emotional anxiety and greater burnout than physicians. Also, nursing assistants seem to feel, according to their statements, "increased" but still significantly less personal fulfillment than doctors and nurses. An explanation for the levels of anxiety and burnout of nursing staff may be that they are more susceptible to work fatigue as they are closer to patients than doctors. Finally, doctors seem to exhibit "increased" but, significantly, lower levels of depersonalization than nurses. This finding could be attributed to the fact that doctors are regarded as employees with high social prestige and, therefore, they feel that they offer something substantial compared to other workers in the health sector (Alexias, Anagnostopoulos, Pilatis, 2010).

As far as the professional status is concerned, we notice that state employees seem to have

significantly more transient anxiety than contract staff who are specializers doctors. The mean age of contract staff was significantly lower than the mean age of state employees. However, no significant associations were found between occupational status and dimensions of burnout of employees. Thus, the modulation of anxiety of specializers' doctors can be, probably, attributed to their medical property.

Finally, we found a significant positive correlation between the average daily number of patients allocated to each employee with the transient anxiety, with emotional burnout and the depersonalization of workers.

Conclusions

The results of this study demonstrate that health care professionals and, especially, nurses experience anxiety and burnout at high levels. Hospital administrations should support health care professionals in order to avoid or treat anxiety and burnout. This support may include: i) training of health professionals in recognition of psychological problems ii) providing continuing training especially in developing coping strategies of work-related anxiety and iii) team psychological support (Mitrousi et al., 2013a). Individually, MNS should reassess their personal targets and ambitions, ask support and deal with interests and objectives outside of work.

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