

**ORIGINAL PAPER****The Experience of Anxiety in Nursing Staff in Public Hospitals of Peloponnese, Greece****Stavroula Mitrousi, MSc, PhD(c)**

Psychologist, Faculty of Human Movement and Quality of Life Sciences, Department of Nursing, University of Peloponnese, Sparta, Greece

**Antonios Travlos, PhD**

Associate Professor, Faculty of Human Movement and Quality of Life Sciences, Department of Sport Management, University of Peloponnese, Sparta, Greece

**Evmorfia Koukia, PhD**

Assistant Professor, University of Athens, Department of Nursing, Athens, Greece

**Sofia Zyga, PhD**

Assistant Professor, Faculty of Human Movement and Quality of Life Sciences, Department of Nursing, University of Peloponnese, Sparta, Greece

**Correspondence:** Sofia Zyga, Assistant Professor, University of Peloponnese, Faculty of Human Movement and Quality of Life Sciences, Department of Nursing, Leonidou 3, Sparta Lakonia, Greece, E-mail: zygas@uop.gr**Abstract****Introduction:** The health sector is one of the most stressful workplaces. Several studies have showed that both nursing staff and nursing students experience different levels of stress. Greek and international literature have identified several stress factors governing the nursing profession: understaffed, exhaustive work, daily care of patients with specificities, interpersonal conflict and organizational obstacles encountered in public hospitals are stress factors that nurses often face.**Aim:** The main aim of this paper was to investigate the state and trait anxiety that nurses face in public hospitals of Peloponnese.**Materials and Methods:** The sample consisted of 395 nurses from hospitals of Argos, Kalamata, Korinthos, Molai, Pyrgos, Sparta and Tripoli. The research implementation lasted from August 2011 until June 2012. The participation of nurses was voluntary. A socio-demographic and occupational characteristics questionnaire was completed and the scale State-Trait Anxiety Inventory (STAI) of Spielberger. The statistical analysis was based on statistical package IBM SPSS 20.**Results:** Nurses showed statistically significant higher total and transient stress compared to the healthy population with women experiencing higher total and permanent anxiety than men. With regard to clinics, the findings showed that nurses of open segments reported higher permanent anxiety, while statistically significant was the headquarters of the hospital in the event of permanent anxiety. In addition, the educational level was a statistically significant factor of permanent and total anxiety, graduates of technological institutes (TEI) and those who did not have a graduate degree reported more idiosyncratic and total stress. In contrast no correlation was found between the three scales of anxiety and age, marital status, work experience, the number of patients per shift, satisfaction for the position and object of the work and the frequency of weekly exercise.**Conclusion:** The nurses have higher levels of stress compared to the healthy population. The adoption of guidelines such as the design of interventions to promote mental health, training programs in anxiety management and support groups for nurses is essential and perhaps protective function for all nurses.**Key words:** Key words: anxiety, nurses, hospital, Greece.

## Introduction

Anxiety is defined as (Manos, 1997) the unpleasant emotional status that includes feelings of tension, fear or even terror in response to risk whose source is largely unknown or unidentified. Anxiety is a common reaction which to some extent exists in most people in the form of overreaction at gentle stressful events.

Anxiety is a complex emotion that occurs later in the development of the individual and makes its appearance without any clear or substantial threat to life. The mobilization of anxiety involves many parameters that have to do with the overall mental life (conscious or not), the relationship with oneself and with others, the value system, the way of interpreting things, the requirements of the social environment and the ability to respond to them, but also a variety of biological factors. To a certain extent, anxiety is normal and useful element of human personality as it increases and strengthens the physical and mental performance (Barlow, 2000). Under normal circumstances is the psychological readiness to vigilance and prepares the individual to act when a situation threatens the psychosomatic constitution. On the other hand, anxiety in excessive form is an unhealthy event, characteristic disturbance of the adaptability of human (Mitrousi et al., 2013).

As the greater the length of the exposure to anxiety is, the more apparent the activation of the Hypothalamus-Pituitary-Adrenocortical (HPA Axis) is (Kastellakis & Christidis, 1998). Specifically, the cells of the hypothalamus secrete the floiotropini hormone (Corticotrophin Releasing Factor, CRF, or Corticotrophin Releasing Hormone, CRH) which through the blood vessel is guided from the hypothalamus to the anterior pituitary gland, which is stimulated and releases ACTH (adrenocorticotropin). The ACTH stimulates the adrenal glands and causes the secretion of stress hormones, namely cortisol and adrenaline that are secreted by the adrenal cortex (Varvogli, 2006). Cortisol increases blood glucose levels and speeds up metabolism. An increased nutrient supply into the cells maintaining high activity levels of the human

body in addressing a stressor. It is, however, a constant activity, in contrast to the sudden bursts of activity "flight or fight response" related to the

sympathetic nervous system. In addition, a person who exhibits an increased secretion of cortisol may show withdrawal and prolonged inactivity. Under the effect of cortisol and other hormones, the available energy is used to increase blood glucose levels and metabolism, while is not used for protein synthesis, including proteins that are necessary for the immune system. In short run, this change in a use of energy may not create problems, but when the stress lasting weeks or months, it is likely to weaken the immune system and make the body highly susceptible to various diseases (Kastellakis & Christidis, 1998).

The health sector is one of the most stressful workplaces. Several studies have showed that both nursing staff and nursing students experience different levels of stress (Koukia & Zyga, 2013; Zyga, 2013; Papazisis et al., 2008). The research of Karanikola et al., (2009) in nursing staff in intensive care units showed that 19.9% of the sample experienced moderate anxiety disorder, 3.9% severe anxiety disorder and female gender were more vulnerable to anxiety. The research of Marneras et al., (2010) in departments of nephrology found that nurses who were none to moderately satisfied with the position and scope of the work had higher levels of occasional anxiety than those who were very to extremely satisfied with the position and scope of the work. Research at medical clinics in four hospitals of Attica (Kourakos et al., 2012) showed that high levels of occasional anxiety associated with the female gender and older age. The research of Rodrigues et al., (2011) which took place in surgical units showed strong correlation between anxiety and the onset of depression, while the research of Gao Yu-Oin et al., (2012) showed that 43.4% of the sample had anxiety symptoms.

It has been observed too that the Nursing students experience stress during their studies, fact that explains the increasing interest on studying the phenomenon the last years (Zyga, 2013). More specifically, researches have shown that stress and personality influence the academic progress and adaptation (Papazisis et al., 2008). Entering and study in the university signals a new period for the students. The changing of their environment including the difficulties of modern practicality, the students experience a lot and various problems and sentimental intensities, as financial or family

problems, sexual problems, depression, problematic relations with their friends or even stress for their future and more generally for their choice of profession (Papazisis et al., 2008).

### **Aim**

The aim of this study was to investigate nurses' state and trait anxiety in seven hospitals of Peloponnese and its association with socio-demographic and professional characteristics. The implementation time of the survey lasted from August 2011 until June 2012. The participation of nurses was voluntary.

### **Materials and methods**

The survey involved 395 nurses from seven hospitals of Peloponnese, whose participation was voluntary. For recording socio-demographic and professional characteristics, a relevant questionnaire was formed, which included items related to gender, age, marital status, educational level and job characteristics (headquarter of work, work position, working time, satisfaction of the work). For the assessment of anxiety, the scale State-Trait Anxiety Inventory (STAI) of Spielberger was completed. The anxiety scale of Spielberger (Spielberger, 1972, 1983) consists of 40 observations, which refer to two subscales: a) the emotional state of the person at the time of completing the questionnaire (i.e. transient stress as a result of this situation) and (b) the emotional state of the person in general (i.e., permanent stress as personality trait). The evaluation is carried out according to the representativeness of the content of proposals for the patient, based on a 4-point Likert-type scale (1-2-3-4). The questionnaire has been adapted to the Greek population and presents sufficient construct validity as well as adequate internal consistency, reliability and replicate measurements (Anagnostopoulou, 2002; Liakos and Giannitsi, 1984). The statistical analysis was based on statistical package IBM SPSS 20 by descriptive data distributions (mean, standard error), control t-test, control ANOVA. To explore the statistical correlation of the quantitative variables was used Pearson's correlation coefficient, *r*.

The anonymity of participants and the safety of the material were preserved in all the stages of the investigation.

### **Results**

In this research, the participants were nursing staff ( $n=395$ ) and the 92.2% of the sample were women. The mean age was  $39.2 \pm 7.5$  years. 65.8% of the sample were married and followed by 30.9% that were unmarried. The distribution of the number of children showed that the highest percentage (56.9%) of the married sample had 2 children. The majority of the sample 93.7% ( $n=370$ ) were graduates of Technological Educational Institute (TEI) also, 8.9% of the sample ( $n=35$ ) had a master's degree and 0.8% ( $n=3$ ) had a PhD.

Regarding the job, the vast majority were nurses in percentage 76.2% ( $n=301$ ) and others in positions of director of nursing service (1.0%), director of nursing sector (1.5%), head nurse (11.4%) and responsible of nursing department (9.9%). About the working years, the average time of overall service was  $14.3 \pm 8.0$  years, while the average working time in the clinic at the time of implementation of the survey was  $11.20 \pm 9.1$  years. About the workload on three shifts found that each nurse serving on average  $11 \pm 9$  patients in each shift. Finally, regarding the satisfaction of the subject or the position of job, the vast majority said that they were from moderate to very satisfied.

From the test implementation it was found that nurses had higher transient and overall anxiety compared to the healthy population and in particular that there was gender effects with women accumulating the highest rates in permanent and total anxiety (Table 1). Regarding clinics, the values of permanent and total anxiety were significantly higher in open sections compared to closed sections. In particular, the implementation of Kruskal-Wallis control showed that the highest values of transient anxiety were obtained by the nurses of the surgery sections and the Office of Nursing Service, while the surgical nurses, orthopedic nurses and ICU had the highest rates of permanent stress (Table 2).

**Table 1: The effect of stress in both sexes**

Gender	Transient stress	Idiosyncratic stress	Total stress
Man	44,23±3,91	40,76±6,87	85,00±9,26
Woman	46,01±5,77	46,01±5,78	89,02±9,38

**Table 2: Frequency of anxiety per clinic**

Clinics	Transient stress	Idiosyncratic stress	Total stress
Pathology	44,16±6,34	41,51±5,22	85,67±9,47
Orthopedic	47,28±6,86	45,21±7,77	92,50±8,80
Urology	43,53±6,58	43,06±6,86	86,60±12,44
Cardiology	46,11±3,87	41,74±3,75	87,85±6,03
Surgery	49,00±6,77	44,20±5,74	93,20±10,58
Operating room	46,25±6,57	43,95±6,98	90,19±11,70
Obstetrics-Gynecology	46,31±5,73	43,62±5,32	89,93±8,46
Pediatric	44,78±5,35	43,00±6,27	87,78±10,03
Artificial Kidney Unit	46,54±5,15	42,89±5,08	89,43±8,57
Emergency Department	45,75±4,95	40,18±4,49	85,93±7,16
Outpatients	42,66±5,41	39,66±3,96	82,33±5,88
Blood donation	46,48±5,05	43,30±5,73	89,78±9,20
Intensive Care Unit	45,29±6,48	44,95±5,92	90,22±9,21
Anesthesiology	45,25±5,02	41,21±7,17	88,50±11,46
Office of Nursing Services	47,33±3,53	44,22±4,05	91,55±6,59
Unit of myocardial	46,18±6,22	42,63±6,28	88,81±11,49

**Table 3: Frequency of anxiety per job position**

Job position	Transient stress	Idiosyncratic stress	Total stress
Director of Nursing Services	49,75±1,25	41,75±6,13	91,50±7,18
Director of Nursing Sector	47,16±4,07	43,00±4,47	90,16±7,19
Head Nurse	48,01±7,10	43,63±5,91	91,65±11,28
Responsible of Nursing Sector	45,05±6,28	42,79±6,29	88,32±11,12
Nurses	45,55±5,48	42,73±5,67	88,29±8,99

The level of education was statistically significant factor in the experience of anxiety as Technological Educational Institute (TEI) graduates and those who did not have a graduate degree had higher permanent stress compared with University graduates (AEI) and those who had a postgraduate degree. Correspondingly, PhDs did not affect anxiety.

The working position served as a statistically significant factor in the experience of anxiety. It was found that directors of nursing services presented the highest transient anxiety and Heads of departments were experiencing the highest permanent and total anxiety (Table 3). The Pearson's correlation coefficient was not statistically significant between the three scales of anxiety and age, marital status and experience, the number of patients per shift and satisfaction of working position and scope of the work.

### Discussion

The present study investigated the stress levels in a sample of 395 nursing staff members in seven hospitals in Peloponnese. According to the results of this study, high levels of perceived and total anxiety recorded and correlated mainly with the female sex. This finding agrees with the findings of several similar studies, according to which women experience more stress (Karanikola et al., 2012; Kourakos et al., 2012; Karanikola et al.,

2009). Nursing is a profession that has traditionally been considered as a female profession. Women are characterized by their multiplicity of roles (employee, mother, housewife, wife, etc.) and this contributes to the increased incidence of physical and emotional fatigue (McVicar, 2003; Tyler and Cushway, 1995). Concerning the clinics it was found that nurses who worked in open section experienced higher idiosyncratic and total anxiety. Probably the characteristics of the open sections, such as the large number of patients, the characteristics of patients, the collaboration with the medical staff, the presence of relatives and the workload may be the factors that can explain this finding. On the other hand, high rates of permanent anxiety of nurses in ICU represent a reality that has been identified in other studies too (Karanikola et al., 2009; Kawano, 2008.) The stressful environment, the severity of patients, the management of technological equipment and the emotional charge are probably the main factors that enhance the experience of anxiety to nurses that working in ICUs.

In this investigation, the higher education and the possession of a postgraduate degree was associated with less experienced anxiety. It appears that both higher educational level and specialization provide more knowledge on the subject matter and as a result in increase of

nurses' confidence, which enables them to perform their job more effectively. Regarding the job position, the heads of departments expressed higher permanent and total anxiety. This finding is consistent with findings of similar studies according to which the event of high anxiety is associated with the responsibility levels of positions (Ahmed, 2003; Payne, 2000). The Pearson's correlation coefficient showed no possible association between anxiety and age, length of experience and the satisfaction of the subject or the job position, in contrast to studies which have shown the existence of correlation between the aforementioned variables (Kourakos et al., 2012; Zyga et al., 2012; Mohamed et al., 2011; Rodrigues & Chaves, 2008; McGrath et al., 2003; Tyler & Cushway, 1995; Healy & McKay, 2000; Jamal & Baba, 2000; Anderson et al., 1996).

### Conclusions

The results of the research in the field of anxiety demonstrate that nurses experience high levels of anxiety compared to the healthy population. The findings suggest that first of all, the administrations of hospitals have to realize the degree of tension and anxiety experienced by nurses. In addition they should adopt and reinforce the nursing staff to participate in interventions which lead to better self-knowledge and mental health.

### References

- Ahmed, S. Al-Aameri (2003). Source of job stress for nurses in public hospitals. *Saudi Med J*, 24(11): 1183-1187.
- Anagnostopoulou, T. Spielberger anxiety questionnaire. In Stalikas, A., Triliba, S., & Roussi, P. (2002) *Psychometric tools in Greece*. Athens: Publications Greek Letters.
- Anderson, W.J.R., Cooper, C.L., & Willmott, M. (1996). Research note. Sources of stress in the national health service: a comparison of seven occupational groups. *Work & Stress*, 10(1): 88-95.
- Barvogli, L. (2006). *The Neuropsychology of stress in daily life*. Athens: Kastaniotis Publications.
- Barlow (2000). *Psychology and Abnormal Behavior: A complex Biopsychosocial Approach*. Volume A. Athens: Ellin.
- Denise Rodrigues Costa Schmidt, Rosana Aparecida Spadoti Dantas & Maria Helena Palucci Marziale (2011). Anxiety and depression among nursing professionals who work in surgical units. *Rev Esc Enferm USP*, 45(2): 475-481.
- Gao Yu-Oin, Pan Bo-Chen, Sun Wei, Wu Hui, Wang Jia-Na, & Wang Lie (2012). Anxiety symptoms among Chinese nurses and the associated factors: a cross sectional study. *BioMed Central Psychiatry*, 12, 141.
- Healy Christine M., & McKay Michael F. (2000). Nursing stress: the effects of coping strategies and job satisfaction in a sample of Australian nurses. *Journal of Advanced Nursing*, 31(3), 681-688.
- Jamal, M & Baba,V. (2000). Job Stress and Burnout Among Canadian Managers and Nurses: An Empirical Examination. *Canadian Journal of Public Health*, 91(6), 454-458.
- Karanikola, M.N.K., Stathopoulou, H., Kalafati, M., Terzi, A.M., Bouzika, M., & Papathanassoglou, E.D.E. (2009). Rating anxiety symptoms in Intensive Care Nursing Staff in Greece. *Nosileftiki*, 48(4), 447-457.
- Karanikola, M.N., Papathanassoglou, E.D., Kalafati, M., & Stathopoulou, H. (2012). Exploration of the association between professional interactions and emotional distress of intensive care unit nursing personnel. *Dimens Crit Care Nurs*, 31(1): 37-45.
- Kastellakis, A.A & Christidis, D.A (editor) (1998). *Biological Psychology*. Volume B. 5th edition. Athens: Ellin.
- Kawano Yuri (2008). Association of Job-related Stress Factors with Psychological and Somatic Symptoms among Japanese Hospital Nurses: Effect of Departmental Environment in Acute Care Hospitals. *Journal of Occupational Health*, 50, 79-85.
- Koukia, E., & Zyga, S. (2013). Critical Cases Faced by Mental Health Nurses and Assistant Nurses in Psychiatric Hospitals in Greece. *International Journal of Caring Sciences*, 6(3): 465-471.
- Kourakos, I. M., Kafkia, B. T., Thanassa, P.G, Kyloudis, G. P., Statharou, K.A, Rekleiti, D. M., & Saridi, J.M. (2012). National Health System (NHS): Investigation of Perceived Anxiety in Nursing Staff. *Vima Asclepiou*, 11(4):563-576.
- Liakos, A. & Giannitsi, S. (1984). The reliability and validity of the modified Greek anxiety scale of Spielberger). *Egefalos*, 21, 71-76.
- Manos, N. (1997). *Basics of Clinical Psychiatry* Thessaloniki: University Studio Press.
- Marneras, H., Theodorakopoulou, G., Albani, E., Gouva, M., Dimopoulou, E., & Kotrotsiou, E. (2010). Job satisfaction and levels of anxiety in nurses working in dialysis centers. *Nosileftiki*, 49(1): 83-90.

- McGrath, A., Reid, N., & Boore, J. (2003). Occupational stress in nursing. *International Journal of Nursing Studies*, 40(5): 555-565.
- McVicar, A. (2003). Workplace stress in nursing: a literature review. *Journal of Advanced Nursing*, 44(6): 633-642.
- Mitrousi, S., Travlos, A., Koukia, E., Zyga, S. Theoretical Approaches to Coping. *International Journal of Nursing Studies*, 6(2): 131-137.
- Mohamed, F., A., Gaafar, Y., A., & Abd Alkader, W., M. (2011). Pediatric Nurses' Stresses in Intensive Care Units and Its Related Factors. *Journal of American Science*, 7(9), 304-315.
- Payne Nicola (2000). Occupational stressors and coping as determinants of burnout in female hospice nurses. *Journal of Advanced Nursing*, 33(3), 396-405.
- Papazisis, G., Tsiga, E., Papanikolaou, N., Vlasiadis, I., & Sapountzi-Krepia, D. (2008). Psychological distress, anxiety and depression among nursing students in Greece. *International Journal of Caring Sciences*, 1(1), 42-46.
- Papazisis G., Vlasiadis I., Papanikolaou N., Tsiga E., & Sapountzi-Krepia D. (2008). Depression and anxiety among nursing students in Greece. *Annals of General Psychiatry*, 7(Suppl I): S209.
- Rodrigues, A. B. & Chaves, E. C. (2008). Stressing factors and coping strategies used by oncology nurses. *Rev Latino-am Enfermagem*, 16(1), 24-28.
- Spielberger, C. D. (1972). Anxiety as an emotional state. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. 1, pp. 23-49). New York: Academic Press.
- Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (Form Y)*. Palo Alto, CA: Consulting Psychologists Press.
- Tyler, P., & Cushway, D. (1995). Stress in nurses: the effects of coping and social support. *Stress Medicine*, 11(4): 243-251.
- Zyga, S. (2013). Stress in Nursing Students. *International Journal of Caring Sciences*, 6(1): 1-2.
- Zyga, S., Tsiros, H., Malliarou, M., Stathoulis, J., Babatsikou, F., Lavdaniti, M., Tsiafferis, S., & Kalokairinou, A. (2012). Intensification of Renal Nurses' Self-Esteem: A Pilot Study. *International Journal of Caring Sciences*, 5(3): 320-327.