

# Psychological distress, anxiety and depression among nursing students in Greece

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**ABSTRACT:** It is usually observed that nursing students undergo tremendous stress during various stages of their course but the knowledge about the stress process and depressive symptoms in this population is limited. The Aim of the present study was to determine the prevalence of psychological distress, anxiety and depression among nursing students in Greece. For that purpose 170 nursing students (34 males, 136 females) of the Department of Nursing of the Technological Educational Institute of Thessaloniki completed 3 self-report questionnaires, the General Health Questionnaire (GHQ), the Beck Depression Inventory II (BDI-II) and the State-Trait Anxiety Inventory (STAI). The mean age was 21.5 years. No difference in stress and depression on the basis of gender was observed. Our results showed that the scores on the GHQ, BDI and STAI tend to increase in the year 2 and 3. The majority of students reported relatively high scores on the GHQ suggesting increased psychiatric morbidity. 52.4% of students experienced depressive symptoms (34.7% mild, 12.9% moderate and 4.7% severe). The scores on the state scale were higher in the years 2 and 3, while the majority of students who had no or mild stress was observed in the first and the last year. Low stress personality traits were also observed in the first and the last year. However, no significant differences between the four years were observed. Our results suggest that nursing students experience different levels of stress and depression and that these factors are positively correlated.

**KEY - WORDS:** Nursing students, psychological distress, anxiety, depression, Greece

## INTRODUCTION

Regardless of the desired outcome, the process of education can be a very stressful experience. Nursing students are valuable human resources, but there is a paucity of comprehensive research in the area of nursing students' psychological distress and depressive symptoms. Detection of these symptoms is crucial since stress and depression can lead to low productivity, minimized quality of life and suicidal thoughts.


It is observed that nursing students undergo tremendous stress during various stages of their course. Occupational mental health and affective well-being among student health professionals has been the focus of increased study in recent years (Biggers et al 1988; Firth 1986; Heaman 1995; Phillips 1988; Russler 1991), and this has led to the

identification of levels of distress, sources of stress and coping strategies reported by student nurses (Beck & Srivastava 1991, Parkes 1982, Parkes 1984).

To our knowledge, there are no published studies conducted in Greek Universities evaluating depressive and anxiety symptoms in nursing students. Studies among students in general have reported that psychological distress and personality influence academic performance and adjustment (Aktekin et al 2001, Jones & Johnston 1997, Sawatzky 1988, Warbah et al 2007). Furthermore, most published studies have merely identified actual stressors: little is known about the impact of the stressor on the individual nursing student.

The aim of the present study was to determine the prevalence of psychological distress, anxiety and depressive symptoms among nursing students in Greece. For that purpose 170 nursing students of the Alexander Technological Educational Institute of Thessaloniki agreed to complete three validated self-report questionnaires during the academic year 2006-2007.

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## MATERIALS AND METHODS

### Sample

The study was conducted during the academic year 2006–2007. One hundred and seventy (170) nursing students of the Department of Nursing of the Alexander Technological Educational Institute of Thessaloniki participated in the study. 34 participants were male and 136 female, with a mean age of 21.5 years. A representative sample of each study year was randomly selected. The students were asked to complete three self-report questionnaires. We decided not to give any questionnaire within 2 weeks of examinations.

### Instruments

The following self-report questionnaires were administered:

*i. The General Health Questionnaire (GHQ):* The General Health Questionnaire (GHQ) (Goldberg & Williams 1988) is a standardized self-report questionnaire used to screen for psychological distress and common mental disorders and has been widely used in primary care. Its main focus is psychological components of illness. The GHQ has been extensively studied with regard to almost every methodological aspect, ranging from reliability and validity to cross-cultural differences. The GHQ 30-item was translated and validated in Greek population (Garyfallos et al 1991). Prevalence estimations were assessed by using the standard method of scoring 0-0-1-1 for each item (maximum score of 30). The locally standardized threshold for use in the community 4/5 was used to identify students with significant psychological distress. The internal reliability analysis in the present sample indicated a  $\alpha$ -coefficient of 0.841.

*ii. Beck Depression Inventory II (BDI-II):* Depressive illness was measured with the BDI-Second Edition (BDI-II) (Beck et al. 1996), a 21-item self-report instrument for measuring severity of depression in adults and corresponds with the DSM-IV diagnosis of depressive disorder. Responses to items for the present study covered the 'past two weeks, including today'. Responses on the BDI-2 items range from 0 to 6 with higher values indicating higher severity. The total score can be divided into categories reflecting severity of depression. Accordingly, the minimal range of depression is 0–11, the mild range is 12–19, the moderate range is 20–26 and the severe range is 27–63. The internal reliability analysis in the present sample indicated a  $\alpha$ -coefficient of 0.827.

*iii. State – Trait Anxiety Inventory (STAI).* Anxiety was measured with the State-Trait Anxiety Inventory (STAI) (Spielberger et al 1970), a 20-item, reliable, self-report questionnaire that is a sensitive indicator of anxiety used in research and in clinical settings. STAI proposes two measures of anxiety. State anxiety (STATE) is defined as a

transitory emotional response involving unpleasant feelings of tension and apprehensive thoughts, while the personality trait of anxiety (TRAIT) refers to individual differences in the likelihood that a person would experience state anxiety in a stressful situation. The scale evaluates feelings of tension, nervousness, worry and apprehension "in the past two weeks, including today". The total score on the STAI was obtained to determine anxiety. STAI has a 20-item form for state anxiety and a 20-item for trait anxiety and each item is scored from one to four. Each form allows a minimum score of 20 and a maximum score of 80. In the present sample the  $\alpha$  coefficient for the 2 subscales was 0.574 και 0.585 respectively.

### Statistical Analysis

The descriptive analysis of the data was computerized and analyzed using the Statistical Package for the Social Sciences (SPSS) version 11.51. The quantitative variants were given in descriptive statistics and the regularity checking was done by means of statistic testing Kolmogorov-Smirnov, while the qualitative variants were described by frequencies. For the comparison of the total scores of the questionnaires between the years of studies the Mann-Whitney test was used. The significance of the association between continuous variables was tested using Pearson's and Spearman's correlation coefficient.

## RESULTS

### Study Population

170 students, 34 men (20%) and 136 women (80%), participated in the study (response rate 100%). 48 were first year students, 45 second year students, 38 third and 39 fourth year students. The mean age was 21.5 years (SD=3.13). The total score of the questionnaires in each year is presented in figure 1. A trend for higher depression and stress levels was observed in females, but no significant deference on the basis of sex was observed (figure 2).

### General Health Questionnaire (GHQ)

35.2% of the total sample scored above threshold (cut off point=4/5) in the GHQ. The mean GHQ scores were 5, 6, 5 and 4 for the four years respectively. The percentage of students scoring above threshold was 37%, 41%, 39%, and 40% indicating increased levels of current psychological distress, which suggest psychiatric morbidity (figure 3). There were no significant differences between the four years.

### Beck Depression Inventory

A majority (52.4%) of students experienced depressive symptoms (34.7% mild, 12.9% moderate and 4.7% severe). High depressive symptoms were reported by 4.7% of the sample. The mean scores on the BDI were higher in year 2 and 3, while the lowest score was observed in year 4. It is

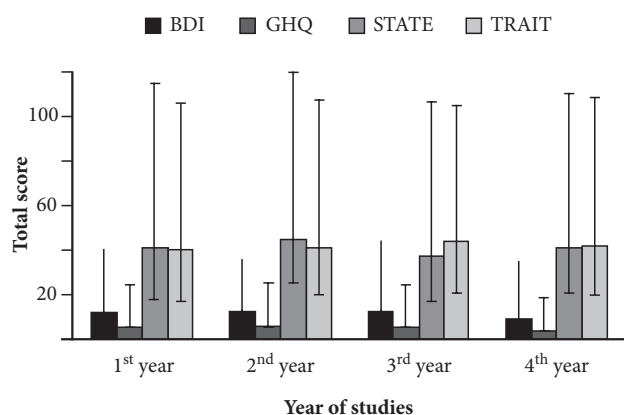
remarkable that none of the students of year 4 reported severe depressive symptoms (figure 4). However, no significant differences were found between the four years.

**State-Trait Anxiety**

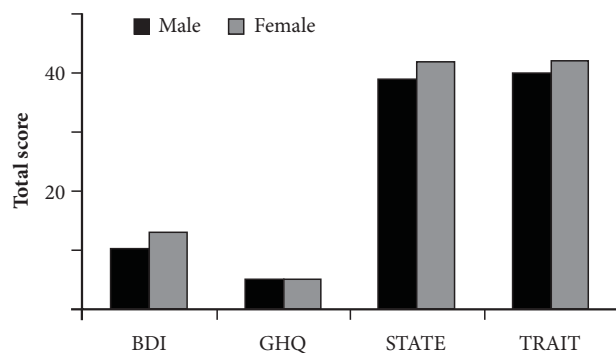
*Stress at the moment (STATE):* The majority of the students (71.8%) perceived stress, most of them in mild levels (31.8%). About 12.4% reported very high levels of stress. The mean scores of state anxiety (stress at the moment) were 41, 45, 37.5 and 41 for the four years respectively. The scores on the state scale were higher in the years 2 and 3, while the highest percentage of students having no or mild stress was observed in the first and the last year of studies (figure 5).

**Stress as a personality trait (TRAIT)**

Mild stress as a personality trait was observed in 42.4% of the students, while a lower percentage of the students expressed high and very high stress levels (9.4% και 2.4% respectively). The score on the trait anxiety scale showed a small but non-significant rise from year 1 to year 2. Remarkable was the finding that the highest percentages of students without stress personality traits were observed in the first and the last year (figure 6). However no significant differences between the four years were observed ( $P > 0.05$ ).



**Figure 1.** Total scores of questionnaires/year.



**Figure 2.** Total scores of questionnaires/sex.

**Correlations between the questionnaires**

A very strong positive correlation was found between depression and psychological distress ( $R_{\text{Pearson}}=0.727$ ,  $P < 0.001$ ), indicating that increased levels of depression are related with higher psychiatric morbidity. The two subscales of stress (state and trait) are also positively correlated ( $R_{\text{Spearman}}=0.743$ ,  $P < 0.001$ ). Both state and trait anxiety are positively correlated to depression ( $R_{\text{Spearman}}=0.579$ ,  $P < 0.001$ ,  $R_{\text{Pearson}}=0.619$ ,  $P < 0.001$  respectively) and to psychological distress ( $R_{\text{Spearman}}=0.610$ ,  $P < 0.001$ ,  $R_{\text{Pearson}}=0.697$ ,  $P < 0.001$  respectively).

**DISCUSSION**

The stressors in nursing education have been consistently acknowledged in the literature for almost 50 years. As early as the 1930s, nurses and student nurses were being polled about the problems and difficulties related to training (McKay 1978). Many of the stressors identified in those early years of nursing education are parallel to the stressors on nursing students today.

In the present study, the majority of students reported relative high scores on the GHQ suggesting increased psychiatric morbidity. Other studies, which have examined distress and adjustment among nursing students (Beck 1995, Warbah et al 2007), have also found that a proportion of students find the course stressful. Different themes that contributed to stress and burnout among nursing students are identified (Beck 1995). Extreme demands, time pressure, reduced motivation and poor coping were some of the causes of stress. Psychological distress, poor adjustment and coping can result in poor academic performance among students. In a minority of students this can result in significant psychiatric morbidity and even withdrawal from the course.

In our sample, year 2 and 3 nursing students indicated experiencing the highest degree of pressure from studies, but the levels of anxiety and depression were not significantly different among the four years. First year students exhibited the lowest depression and anxiety scores indicating a positive association between being senior in the school and depressive symptoms. Similar to our results, two other studies showed that freshmen had the lowest average BDI scores (Bakir et al 1997, Bostanci et al 2005). There was a positive correlation between the study year and the increased average BDI scores. On the other hand, several studies did not find any association between BDI scores and the study year (Dogan et al 1994, Taysi et al 1994). Contrary to our results, in another study first year students showed more symptoms of psychological distress and depression than the others (Jones & Johnston 1997).

These variations may originate from differences in the measurement tools used; time when the study was performed, or sampling errors. However, we think that the

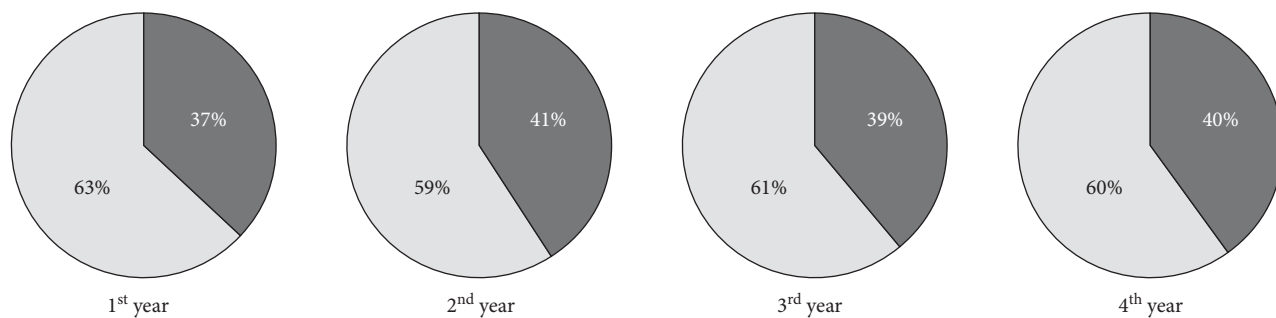


Figure 3. Percentage of students with increased level of psychological distress (GHQ score ≥5, gray color).

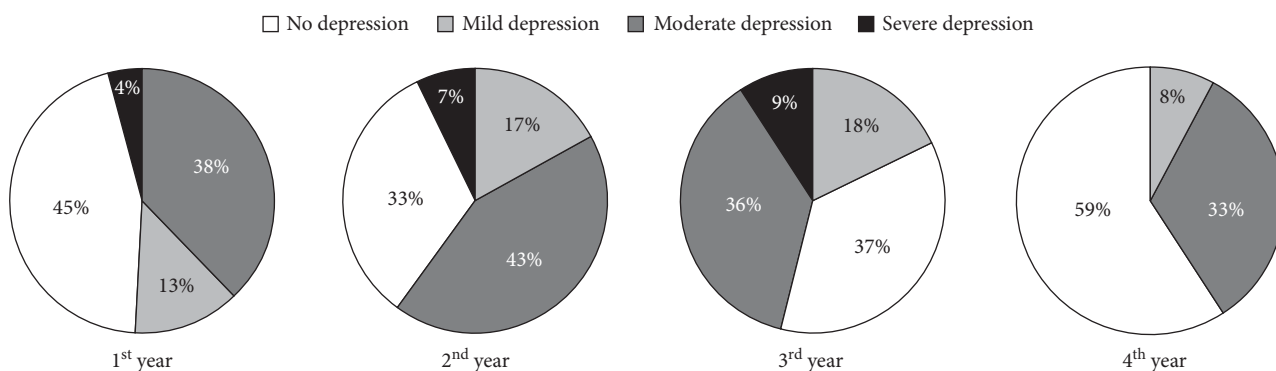


Figure 4. Percentage of students with depressive symptom in the four study years.

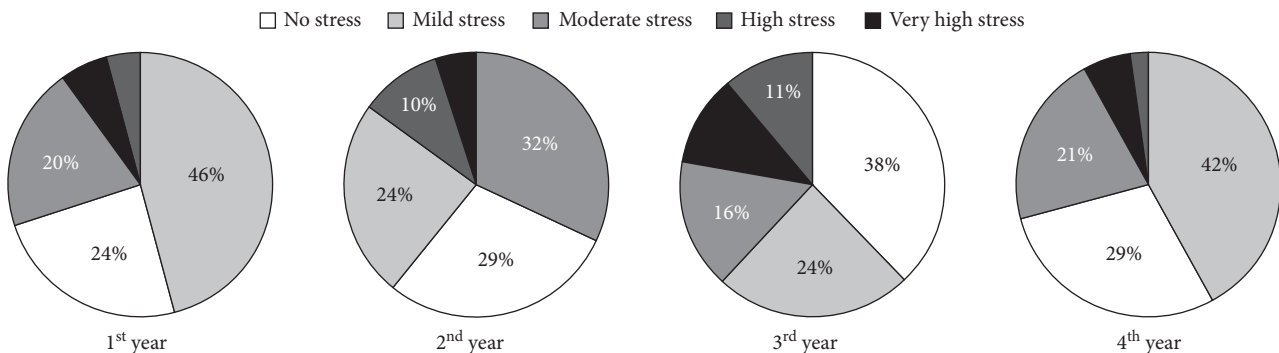


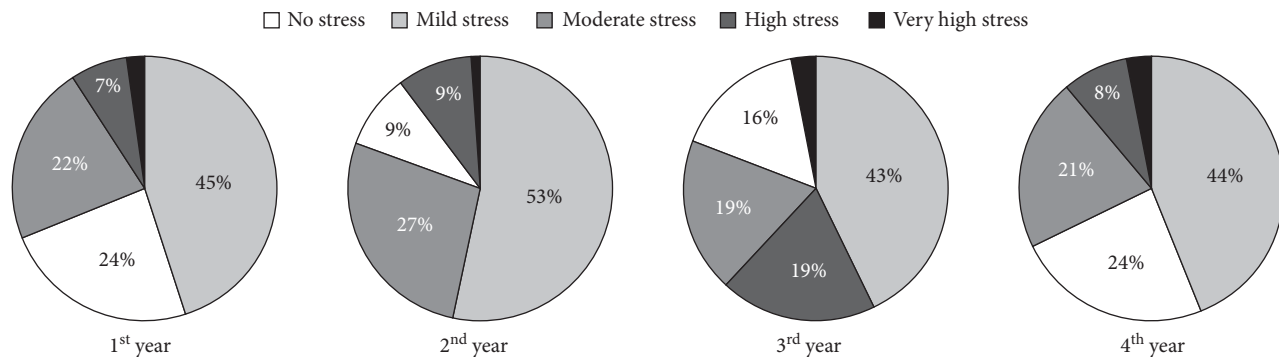
Figure 5. State stress levels in the four study years.

workload of the students increases with the study year. High stress levels in the years 2 and 3 may be related with the introduction of clinical practice, feelings of personal inadequacy and fear of making mistakes. Also, depressive symptoms may be more common as a result of student worries about their future as they are approaching graduation.

We also found a greater increase in depressive and anxiety symptoms among female than among male nursing students that persisted only at a trend level ( $P=0.07$ ). In accordance with our results, significantly more depressive symptoms were found in female than in male students in two different studies at a Turkish and a Canadian university (Bakir et al 1997, Dion & Giordano 1990).

Stress from many sources has been reported by nursing students. Academic sources of stress include examinations, long hours of study, assignments and grades, lack of free time and faculty response to student need. (Beck & Srivastava 1991). Clinical sources of stress include working with dying patients, interpersonal conflict with other nurses, insecurity about personal clinical competence, fear of failure, interpersonal problems with patients, work overload and concerns about nursing care given to patients (Parkes 1985). Additionally a perceived lack of practical skills is a common worry for many diploma students.

Because all students are exposed to essentially the same academic stress, it may be more important to question



**Figure 6.** Trait stress levels in the four study years.

why some students seem to thrive despite these stressors, while others leave because of them. Pollock's Adaptation Nursing Model (Pollock 1984) encompasses many of these important concepts. This model is proposed as a means to understand the stress process in nursing students.

Overall, the results of this study suggest that nursing students experience different levels of stress and depression and that these factors are positively correlated. These results may help to better understand the phenomena of psychological distress, anxiety and depression among nursing students. They may also help nursing educators understand the difficulties of nursing students and, based on individual difference, assist them individually in order to promote the quality of clinical practice. Early recognition of students under stress and counseling will go a long way in helping students adjust to the demands of the nursing course and to hostel life.

Encouraging nursing students to broaden their personal social supports and social networks could help adaptation during their educational experience and throughout their lifetime. Future research should also focus on ways of increasing students' ability to cope with the stressors of nursing education.

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