

Psychological Stress amongst Maltese Undergraduate Medical Students

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ABSTRACT

Introduction: The undergraduate medical course is known to be a stressful course within the University structure but there are no national studies available to review this.

Objective: To compare the levels psychological stress between medical and non-medical students and to distinguish stress levels over the five years of undergraduate study of the Bachelor of Medicine and Surgery Honours degree at the University of Malta.

Method: Two separate depression and stress related questionnaires were distributed to a medical and non-medical student population. The results obtained of the two questionnaires were compared and analysed using SPSS version 16.

Result: A total number of 561 students completed the questionnaires including 208 medical and 253 non-medical students. The medical students scored an average of 32.71 (Q-1) and 16.30 (Q-2) whereas the non-medical students scored lower with a 29.17 (Q-1) and 14.70 (Q-2). This indicated a statistically significant difference in scores between medical and non-medical students ($p < 0.05$). Female students were also noted to be statistically more stressed than male students ($p < 0.05$). When comparing the different grades of student the third year students were noted to be the least stressed cohort ($p < 0.05$) whereas the 2nd (Q-2) and 5th (Q-1 & Q-2) year students were the most stressed groups ($p < 0.05$). There was no significant difference between the 2nd and 5th year students with regards to their scores of Q-2 but there was a difference noted when comparing the Q-1 scores.

Conclusion: The results confirm the need for a framework to support medical students during their course, especially during the two more demanding years (2nd and 5th year). Further scope for investigation may be the manner with which males cope as the stress levels appear to be generally lower and also to compare with future groups of students following a move from one venue to a newer medical school.

Keywords: Psychological, Stress, Students, Medical, Undergraduate

Introduction

Stress is prevalent among medical professionals, and that is also true for the medical students due to their busy and schedule, necessary as a result of the medical training which is demanding on various levels^{1,2}. This stress stems from academic pressure and, occasionally, due to the perfectionist standards of many students who take on medicine as a career choice. One must also consider that the constant face to face encounters with so many emotionally draining realities of life; involving raw human emotions such as pain, fear, issues concerning sexuality, and death; thus adding a further dimension to the already existing demands^{1,2}.

Several scientific studies have shown that the pressures and demands of the medical educational system can have detrimental effects on the physical and psychological well-being of the student³, as well as academic performance⁴. The long-term psychosocial well-being of medical professionals is of particular concern given the higher rates of mental illness, dependency issues and suicide^{5,6}. There is also evidence to suggest substantial alcohol consumption reported in medical students although it is unclear if this habit is continued in later life^{7,8}.

Given the importance of stress on medical students we undertook this study as an attempt to determine stress in medical students attending the University of Malta; and if any problems existed then we would use the results of this survey as a first step to develop a solution.

Aims

To compare the levels of psychological stress between medical and non-medical students and to distinguish stress levels over the five years of undergraduate study of the Bachelor of Medicine and Surgery Honours degree at the University of Malta. Secondary aims included the comparison between genders and also between different stages of education within the undergraduate medical course.

Material and Method

A cross sectional study was conducted in the Malta Medical School from January to February 2005. All medical students were selected as respondents. Initially each respondent was requested to completing a basic demographic section including information such as age, attended course, year of education and gender. The non-medical group was chosen through randomised sampling from each course attending university at that point in time. The questionnaires were distributed and collected in a manner by which anonymity was maintained.

Each respondent was then asked to complete two separate questionnaires. The first questionnaire (Q-1) was developed specifically for this study, largely based on the General Health Questionnaire⁹ and Becks' Depression Inventory¹⁰ was also used to screen for depression in the respondents'. The newly developed questionnaire consisted of 20 questions. The second questionnaire (Q-2) was a self-administered instrument similar to the General Health Questionnaire (GHQ -12)⁹ also used to screen for symptoms of psychological stress. This instrument consisted of 12 questions. Data obtained was analysed using the Statistical Package for Social Sciences (SPSS) programme version 16.0.

The scores from the psychological questionnaires were not normally distributed, so non-parametric statistics were used. Continuous variables were compared by means of the Mann-Whitney U-test and Kruskal-Wallis one-way analysis of variance; Categorical variables were compared using the X^2 test. Scores between different years of the course were compared by use of the Wilcoxon test. Bonferroni adjustments were made to allow for multiple comparisons.

Results

From a total of 250 distributed questionnaires were distributed to all medical students studying at the University of Malta. A total of 208 completed questionnaires were obtained giving a response rate of 83.2%. A further 253 questionnaires (from the initial 300 distributed) were completed by non-medical students attending other courses at the University of Malta giving a response rate of 84.3%.

The medical students scored an average of 32.71 (Q-1) and 16.30 (Q-2) whereas the non-medical students scored lower with a 29.17 (Q-1) and 14.70 (Q-2) [Figure 1]. This indicated a statistically significant difference in scores between medical and non-medical students ($p < 0.05$). [Figure 1]

When comparing the different grades of student within the undergraduate medical course; third year students were noted to be the least stressed cohort ($p < 0.05$) whereas 2nd (Q-2) and 5th (Q-1 & Q-2) year students were the most stressed groups ($p < 0.05$). There was no significant difference between the 2nd and 5th year students with regards to their scores of Q-2 but there was a difference noted when comparing the Q-1 scores. [Table 1] [Figure 2]

When comparing between the genders; the female students were noted to score higher on the depression and stress scores than their male counterparts ($p < 0.05$). [Table 2]

Discussion

The fast pace of medical school can be relentless and due to the lack of free time, students may not feel they can establish or maintain adequate support systems, or may feel they are showing weakness if they seek support. Students receive a great deal of science their first two years, but limited exposure to the art of medicine, including communication with patients and families, setting limits, and maintaining healthy boundaries. Many patients are difficult to diagnose, cannot be cured, and may not respond to therapies; thus the student experiences problems without solutions.

The undergraduate medical course is known to be a stressful course within the University but there are no previously conducted studies available to review this. Therefore, this study was considered to be the first national study to investigate stress in students involved in a healthcare setting. The results confirm the need for a framework to support medical students during their course, especially during the two more demanding years (2nd and 5th year). Further scope for investigation may be the coping strategies of the male students as well as a possible consideration of the difference in lifestyle, which consistently resulted in a lower general stress levels in males as compared to females. There may be scope to compare stress levels in future groups of students following a change in the curriculum and venue. A study conducted in Iran showed that there was no difference in stress between the clinical and non-clinical aspects of the

course. Our study however, shows that there are carrying degrees of stress levels present within the two course aspects¹¹.

Our study seems coherent with previous reports which indicate a higher prevalence of psychiatric symptoms in medical students as compared to the general university student population¹². Relatively high mean levels of distress are experienced by both male and female medical students. A large multi-centre study in the US showed a high level of burnout resulting from stress in medical students¹³.

With regards to gender differences this study showed a relatively high prevalence of stress experienced by both male and female medical students. There are, however, a couple of reports from the United Kingdom which indicated that there was no difference in gender between students on any of the psychological distress questionnaires^{14,15}. The same country, however, later found, that later in postgraduate training; female doctors report higher rates of psychological distress than males¹⁶. This may be another potential area for further investigation

The high response rate of this study (83%) compared with other published reports¹⁷ makes its findings of particular importance, especially as previous surveys have reported that non-responders tended to be more depressed than responders¹⁸. However many surveys need to be applied to the local group of medical students with caution. Most students live with their families and the majority also live within a short commuting distance of less than 30 minutes. Thus it might be expected that the strain might well be less than that at larger universities abroad due to financial and accommodation concerns in universities of larger countries¹⁹. A major limitation was the self-reporting technique used to access the information for this study.

Our findings suggest that medical schools may be admitting a small group of students who are already distressed at the beginning of their training and may remain distressed throughout as a result of poor coping strategies and poor social networks secondary to introvert characters. These individuals remain at a high risk of emotional disturbance during postgraduate training. These “at-risk” students should be identified as early as possible; either before they have entered medical school possibly as part of an entry requirements or early in their medical training, and given the desired support. Detailed psychological profiling of students might help to identify

those who are psychologically unable to cope with medicine as a career, while distinguishing them from students who are empathic and receptive to the distress of others.

Numerous authors have emphasized the role of positive mental health among students for their future personal and career-based growth²⁰. It may not be a possibility to completely eliminate stress from the current educational programme structure, and there may be benefits to this with regards to preparation for “the real world” work requirements. It is, however, important that the stressors specific to university students, (specifically medical students) are determined and thus develop stress intervention programs. Preventive interventions for medical students nullify the negative consequences of stress and improve their life-style. It promotes development of individual and social resources as well as doctor patient relationship at the formative period of the student's career²¹. We suggest an increased awareness of stress, its consequences, and the promotion of stress management modalities early in the medical carrier. Preliminary talks by the community psychiatrist may also be extremely useful in the first year of education.

There are undoubtedly many difficult, unchangeable aspects of medical training however giving an active role to students in the development of their own education leads to a greater acceptance and a more positive outlook on what are for many the hardest years in a doctor’s life. Increased patient contact, whilst simultaneously providing psychological support, may be beneficial for both the students and the tutors. Other methods suggested for reducing student stress are the use of small groups of teaching and support and counselling service²². Medical education has partly achieved this through the introduction of committees dedicated to the examination of current teaching methods. This then allows the joint staff-students committee to propose and implement changes in regulations governing various aspects of medical care including career bases issues²³.

Detailed investigations at international and local levels of these stresses throughout universities based on the introduction of centrally based procedures may assist in dealing with these problems²⁴.

Conflict of Interest: None declared.

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Table 1: Mean Scores for Medical Students across the Five Years of Education

Year of Education	1	2	3	4	5
Sample Number	51	36	43	35	43
Q-1 Mean Score	33.16	33.03	28.88	32.17	36.16
Q-2 Mean Score	16.8	17.78	13.65	15.94	17.42

Table 2: Mean Scores for Male and Female Students

Gender	Male	Female
Sample Number	192	269
Q-1 Mean Score	29.23	31.86
Q-2 Mean Score	13.79	16.58

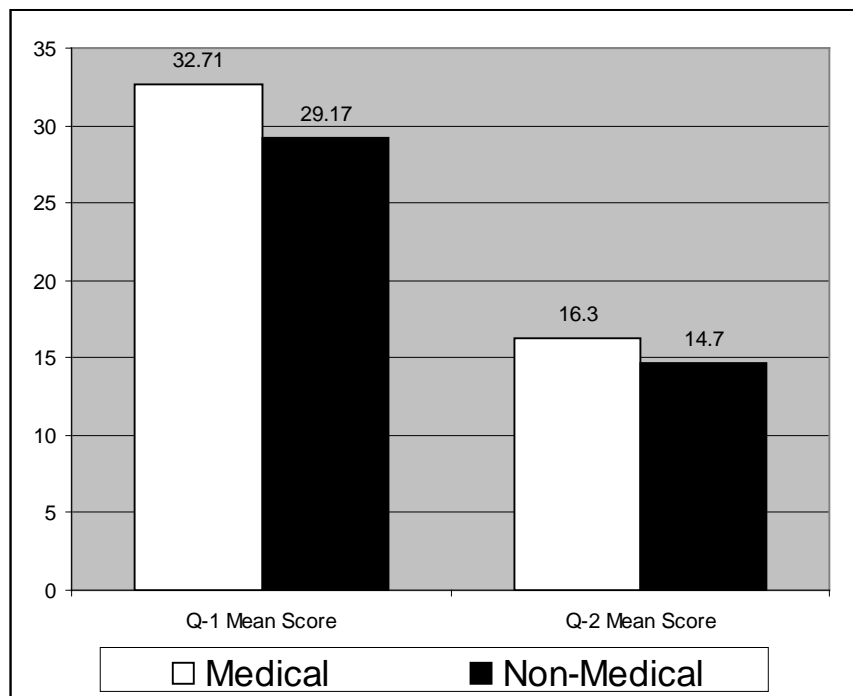


Figure 1: Comparison of mean scores of medical & non-medical students

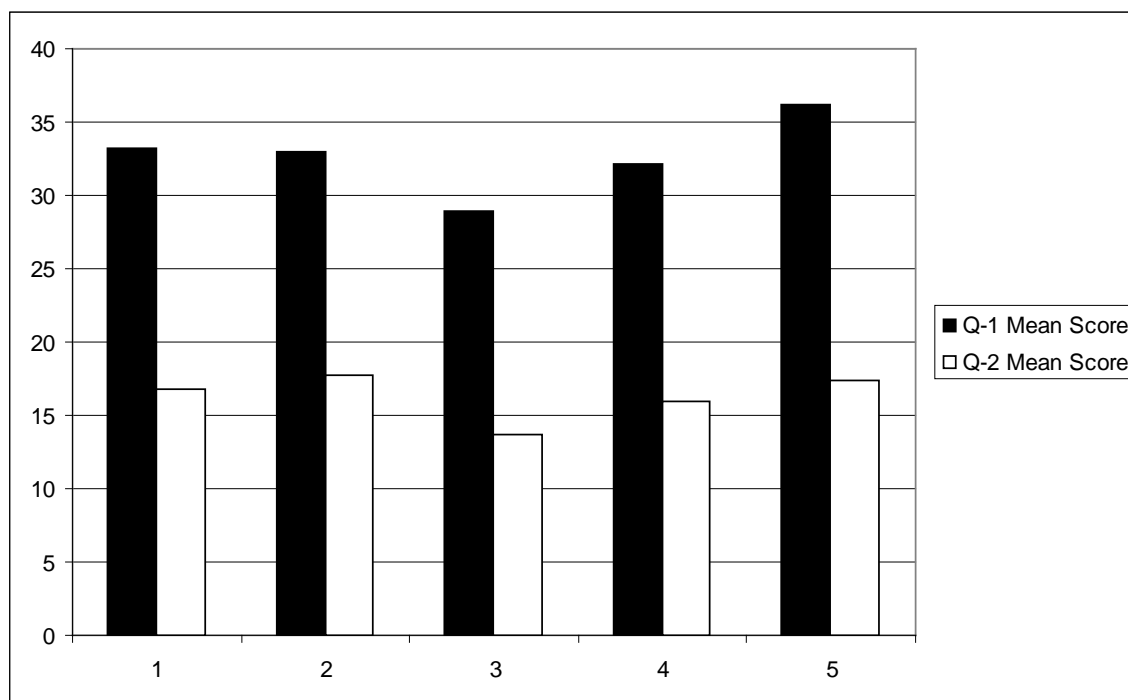


Figure 2: Comparison of mean scores of students attending an undergraduate medical course.