

Academic stress and its effect on medical students' mental health status

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ABSTRACT

The high level of academic stress among medical students in the initial years of study negatively affects their health. This review aimed to analyze the data on features of a medical students' mental status and its dynamics in the course of study. The analysis was applied to the scientific publications (mainly over the past 5 years) on the issue of academic stress and medical students' mental status in different countries from computer databases: PubMed, Medical-Science, eLibrary, Web of Science, and Scopus. It is established that those entering medical schools are characterized by a high level of stress and anxiety, and in the first 3 years of study, their strengthening is observed. In addition, a high level of suicidality risk is noted: From 45% to 83% of the students had suicidal thoughts. The most significant stress situations for medical students are sessions and examinations. Due to the high study load and the need to prepare for classes for the following day, more than half of the students were sleep deprived (<6 h). To overcome stress, a significant part consumed alcohol and smoked tobacco, which is a risk factor of addiction. From there, medical and psychological aid should be available for medical students. It is necessary to train them in proper time management, methods of optimal self-study with educational materials as well as constructive ways to overcome stress, auto- and hetero-aggressive trends, effective conflict resolution, and relaxation methods which will keep students healthy mentally and prevent emotional burnout.

KEY WORDS: Academic stress, Addictive behavior, Anxiety, Asthenia, Depression, Mental disorders, Mental health

INTRODUCTION

The medical student's activity is one of the intense emotional types of work, which affects the level of their mental and somatic health.^[1,2] Among medical students, the prevalence of burnout and mental disorders is increasing.^[3] At the same time, medical education implies reinforcing the idea that physicians should be invincible and immune to mental disorders.^[4] Medical students have a high level of academic stress,^[5] and senior students cope with it better than initial year ones.^[6] Academic stress is higher among foreign students who have poor knowledge of a local language, live in a hostel^[7] - here, a number of emotional difficulties caused by initial adjustment and immersion into a new ethnocultural environment,^[8] changed living conditions, new requirements for educational adjustment,^[9] and the need to master a

new language for a year are added. An important role is played by migrational stress associated with the absence of familiar environment and lack of support from relatives.^[10]

In this regard, this review aimed to analyze the data on features of a medical students' mental status and its dynamics in the course of study.

MATERIALS AND METHODS

The analysis was applied to the scientific publications (mainly over the past 5 years) on the issue of academic stress and medical students' mental status in different countries from computer databases: PubMed, Medical-Science, eLibrary, Web of Science, and Scopus.

RESULTS AND DISCUSSION

The study demonstrates high prevalence of depression and anxiety among medical students, with levels of overall psychological stress consistently higher than those of the general population and age-comparable

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peers.^[11-13] Moreover,^[14] among those entering medical schools, the prevalence of stress, anxiety, and depression is 3.6%, 54.5%, and 1.9%, respectively. Severe stress is observed in 33.8% of medical students, with females 2.3–11.8 times more likely to develop stress than males,^[15,16] especially in their 1st year.^[17] According to other sources,^[18] the overall level of anxiety among male and female students is the same, although female students express their concern more when communicating with patients and their relatives.

The highest prevalence of stress occurs during the first 3 years of study, with a gradual decrease from 58.3% to 56.6% - by the 4th and 25% by the 6th year.^[19] At this period, the use of various psychoactive substances, such as alcohol, chewing khat, and smoking cigarettes, is a common practice among stressed students: Students under stress chewed khat 3 times more often, smoked cigarettes 4.5 times more often, and took alcohol 2 times more often. One of the ways to relieve psychological tension and counter stress for students is smoking tobacco.^[20] Thus, the choice of non-constructive ways to counter stress may be a risk factor of addictive behavior in medical students.

Among medical students, 17% suffer from moderate and severe depression and 49% have burnout. A significantly greater risk of depression is associated with inadequate support from family and friends as well as other medical students.^[21] These data are consistent with Russian studies^[22] - a survey of 2-year students after 3 months from the beginning of the course using the hospital anxiety and depression scale revealed anxiety symptoms in 43.7% of the students (27% of subclinical cases and 16.7% of clinical ones) and in 15.6% of cases - depression (3.1% - clinical and 12.5% - subclinical). Among 1st year students, anxiety was revealed in 64.5% of the cases, half of the cases are clinical. The majority of the students - 98.8% had asthenia of different intensities (MFI-20 test), moderate and severe in more than half of the cases. In 92.3% of the cases, it was accompanied by sleep disorders.

The most significant stress situations for medical students are session and examination periods,^[2,23] and the main sources of stress are academic factors,^[14,24] such as pressure from teachers and a family, competition between students, vast volumes of information to be studied, increase of study load before examinations, a lack of time for revision, a great absence rate resulted in missed assignments, poor academic performance, failure to receive the expected grades, too long study period, the need to deal with cadaveric material and a tight schedule, as well as a lack of skills in time management and self-discipline, inability to establish priorities, and disappointment in the chosen profession.^[25,26]

The high level of academic stress, in turn, causes emotional burnout in medical students,^[27,28] negatively affects overall health and academic performance,^[29-31] and contributes to the development of anxiety and depression. According to the study of Oku *et al.*,^[32] 39% of medical students have a “poor mental health status.” In addition, medical students have a high level of suicidal risk: From 45% to 83% of them have suicidal thoughts.^[6,22,33]

Due to the high study load and the need to prepare for classes for the following day, a third of the students (30.7%) reduced their sleep time to 4–5 h a day; another 33.1% slept no more than 6 h. In addition, 88.6% of the students showed pre-insomnia, middle insomnia, and post-insomnia (in 72.3% of the cases in various combinations). A fifth of the students (24.1%), in turn, thought about quitting their studies at a medical school and mastering another profession.^[22]

High levels of stress and emotional burnout are associated with a decrease in life satisfaction, thoughts of falling out of life, and suicidal ideation; they reduce performance, commitment to study, and increase a stress level.^[27] The motivation for choosing a medical specialty is different, and students who come to medicine due to an illness, family member's death is more vulnerable to emotional burnout.^[34] The risk of burnout is doubled from the 3rd to the 6th year of study regardless of a gender.^[35] This may be caused by the wishful thinking on transition to clinical departments or when starting working with patients. Another risk factor for forming cynicism, burnout, and poor academic performance is a lack of altruism.^[36]

According to Ludwig *et al.*^[37] in the 3rd year of study, a significant increase in the proportion of students at risk of depression (39%) was noted compared to the 1st year (28.4%). This may be related to the transition to clinical courses, which are quite a stressful experience for medical students.^[38] However, already by the fourth course,^[39] there was a decrease in the severity of anxiety and depression. The authors associate this with the adjustment to stress during the clinical year. A clinical department teachers' attitude to the students and work they perform may also be a determining factor: Respect, more detailed explanation of material, demonstration, and teaching practical skills, which promotes students' greater confidence and better adjustment to stress.

Stress and anxiety result in distraction during reading and simplification of studies,^[29] anxiety and depression - to expulsion from medical schools, impairment in ability to work effectively, strained relations, burnout, and development of suicidal tendencies.^[39]

Students' support systems available at school are of great importance for prevention of academic stress. For medical schools, it is required to identify students who suffer from depression as early as possible, especially when depression has been for a long time.^[40]

It is known that medical students with a higher level of anxiety and depression often deny support systems or have difficulties accessing it.^[41] At the same time, meeting the individual students' needs and providing them with a safe environment are the key elements of a successful self-help program in stressful situations.^[42] As defined by the students themselves, social support from peers and teachers, consulting services, and various extracurricular activities are the most useful.^[43] They emphasize the need for individual psychotherapy sessions and trainings aimed at reducing emotional tension and increasing social intelligence.^[44]

The analysis of coping strategies used by medical students may serve as a material for consulting on their personal development with respect to future career.^[45] Attention to each student's adaptive capabilities and coping resources may facilitate their adjustment and minimize burnout.^[46] Repeated visits to a specialized student's consulting center at a high level of psychological stress increase the level of general functioning.^[47] The usual approach to supporting students is to offer them short-term correction programs that improve attitude to studies and are focused on preventing failures.^[48] According to other data,^[49] a plenty of self-study programs to train skills and develop strategies aimed at improving the psychological health and students' performance demonstrate only a short-term improvement in depression and anxiety reduction.

Gain in mental health reduces the adverse effects of emotional burnout.^[12] In addition, improvement of the physicians' ability to reveal their own health problems will enhance their credibility as of role models and their ability to provide optimal care for patients.^[50]

CONCLUSION

Thus, in the course of study at medical schools, students face a host of stress factors, the most significant of which are academic: High study load and a lack of time management skills to prepare for classes, excessive pressure from teachers, and disappointment in choosing the profession. The above-mentioned factors undermine medical students' mental health and lead to asthenic, anxious and anxious-depressive disorders, and emotional burnout. Altruistic motives for choosing a physician's profession as well as confidence in their choice are protective factors for students, but unfortunately, it is almost impossible to influence them. Furthermore, students often use non-

constructive ways to counter stress causing addictive behavior, such as smoking, drinking alcohol, and abuse of social networks. The target for programs of medical and psychological aid should be a lack of time management skills to prepare for classes, inability to set priorities. It is necessary to train students in the proper time management, methods of optimal self-study with educational materials as well as constructive ways to overcome stress, methods of relaxation, effective conflict resolution, and countering the auto- and hetero-aggressive trends. It is reasonable to increase the availability of psychological support systems for students, to fight the stigma and beliefs in the shame of psychological problems. In addition, it is necessary to optimize a class schedule, replenish funds of school libraries, and train academic teaching staff with respect to psychological pressure reduction.

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