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Mental Distress among Medical Students

Syeda Rubaba Azim

Abstract

Depression, anxiety, and stress affect the mental health of an individual. Previous studies have shown high rates of depression, anxiety, and stress among medical students throughout the world. Medical students are future doctors, but mental distress among them has negative effects on their output, which ultimately affects patient care and quality of life. This chapter will discuss various reasons of mental distress among medical students and proposed solutions for the well-being of medical undergraduates like providing proper student support service and more opportunities for extracurricular activities.

Keywords: mental distress, medical students

1. Introduction

The World Health Organization defines health as: “A state of complete physical, mental and social well-being and not merely the absence of disease” [1]. Many of us perceive health merely as being physical fitness and neglect the importance of mental health. Depression, anxiety, and stress levels are considered as significant pointers for the psychological well-being of the population. It is predicted that by the year 2020, depression will become the second most common reason of disability globally [2]. Failure to identify and cure of these mental disorders might have unwanted bearings on the lives of individuals [3].

Mental distress has been well identified in undergraduate medical students and is a matter of concern in both developed and developing countries [4]. The young students are the most susceptible group of the population to stressful life events, especially those who are pursuing a higher professional education in a competitive setting [5]. It is noted that medical undergraduates have higher levels of mental distress than the general population and their fellow peers [6]. Medical education encompasses challenging curriculum and clinical training [7]. The duration of the medical course is different across countries; some have 4-year graduate programs, and others have 5- or 6-year undergraduate programs [8]. The medical curriculum is usually divided into basic or preclinical (1st and 2nd years), clinical (3rd, 4th, and 5th years), and clinical house job (6th year) periods. The curriculum of preclinical phase focuses on basic medical science subjects, i.e., anatomy, physiology, and biochemistry, whereas the clinical phase emphasizes on clinical subjects, i.e., surgery, general medicine, pediatrics, community medicine, forensic medicine, and gynecology. In the clinical internship period, medical graduates have to rotate in different wards in the hospital and emergency units for 1 year under direct supervision.

Medical students learn specialized knowledge, skills, and attitudes which prepare them to become a competent physician; this highly demanding medical curriculum may have undesirable effects on the learner's physical and mental health [9, 10].

A high prevalence of stress, anxiety, and depression among medical students has been identified globally [11–14]. Medical education can cause a considerable amount of psychological stress on undergraduates [7]. Various psychological morbidities have been reported among medical students, ranging from stress, anxiety, social problems, depression, burnout, and suicidal ideation [15]. Due to the heavy educational workload in undergraduate medicine, medical students are more prone to psychiatric complaints such as depression, anxiety, and stress than their nonmedical peers [16]. Depression and anxiety in medical undergraduates can also continue during internship and residency periods and later in the medical professional life [9].

One of the major aims of medical education is to produce knowledgeable, skilled, and proficient doctors. The medical profession is considered as one of the prestigious professions in society. Students enter in the medical field for various reasons, including fulfilling their own passions, parental pressure, financial and job security, to secure a respected place in society, etc. [17].

Studies suggest that medical education may have an unintended harmful effect on students' mental health, resulting in high prevalence of depression, anxiety, and stress among medical students [10, 17–19]. It has been hypothesized that various factors are responsible for the decline in mental health of medical students, including academic pressure [20], increased workload [13], financial issues [20], sleep deprivation, and exposure to patients' suffering and deaths [7]. Mental distress adversely affects the learning and cognitive abilities of students [21] which might have an influence on their academic performance [10]. A study in the UK showed a high dropout rate in psychologically ill students [9]. It is crucial to recognize students' mental distress and their causes so that it can help the medical educationist to develop necessary amendments in the curriculum to ensure production of graduates who are emotionally fit for their difficult training to deal with various aspects of life like human suffering and death [17].

2. Prevalence of depression, anxiety, and stress among medical students

A widely distributed body of literature indicates that the prevalence of mental distress is increasing among students studying medicine [16, 20, 22]. It is evident that mental health problems are prevalent in the whole society, but university students are significantly more affected than the general population [14, 23]. This might be due to numerous challenges that university students have to face such as competition to succeed, high academic demands, teacher and parent's expectations, increased workload, financial problems, and apprehension about the future [24]. And among all university students, medical students exhibit higher mental distress than both the general population and their age-matched peers [20]. Worldwide medical undergraduates have been found at risk of mental distress and reduced life satisfaction [7, 24, 25]. Medical training involves many risk factors for mental illness, including academic burden, lack of sleep, minimal physical activities, and decreased time for social activities. A large study conducted in the USA, including six medical schools (582 students), concluded that when medical students enrolled in a medical institute, they had better or similar mental health than the general population. It shows that higher rates of distress reported in medical students are the result of the over-competitive training process of medical education that can have an unfavorable effect on the mental health of students [26].

3. Prevalence of mental distress among medical students in western countries vs. non-western medical students

Dyrbye found the significantly higher frequency of mental distress among US and Canadian medical students than the general population [20]. Dahlin et al. [10] reported that 13% of Swedish medical students were depressed as compared to 7.8% in an age-matched control sample and, of further concern, one-third of the students reporting suicidal thoughts during the course of training. Another research study conducted in Australia involved 1811 medical students and concluded that one in five students reported suicidal thoughts over the past 1 year [27].

Studies from non-western countries also reported a high prevalence of mental distress [5, 7, 9, 13, 28–30]. There is a small but growing body of research that has recently emerged that attempts to determine the prevalence and the causes of mental distress among medical students of Pakistan. Pakistani study findings are not different from rest of the globe, and they also found high mental distress among medical students [17, 19, 31–33].

It is clearly obvious from the above discussion that the prevalence of mental distress is higher in non-western countries than western ones. This might be due to low knowledge and awareness about mental health in developing countries [34]. But there is evidence that western institutes did introduce curricular changes, better assessment, and innovation to cope with stress [20].

4. Potential causes of depression, anxiety, and stress in medical students

This section will explore the sources of psychological distress among medical students. Various potential sources of mental distress found in literature among medical students are discussed below.

4.1 Academic demands

4.1.1 Vast syllabus

The medical curriculum had long been identified as one of the important risk factors for distress among students. Several studies recognized assessments and academic-associated elements as the most substantial stressors [7, 22, 25, 32]. A longitudinal study in the UK concluded that the enormous academic load is the most significant reason of mental distress among medical students [35]. Studies have shown that the mental health of many students deteriorates after their enrollment in medical school and remains low throughout their training [9, 17, 22]. The poor mental health of medical undergraduate affects not only their physical well-being but also their educational achievements during their training period [9]. Some degree of stress facilitates learning and performance, but intense pressure and huge demands of the medical curriculum may have undesirable effects on vulnerable students' behavior which reduces their learning abilities [36]. There is evidence that prolonged stress exposure may affect the prefrontal area of the brain, which is responsible for higher cognitive functions and learning [37]. Stress and anxiety not only cause underachievement but also result in low-level self-esteem and reduced motivation and effort to complete educational tasks [6]. Poor and unsatisfactory academic achievement may further increase the mental distress among students [15] which may have serious consequences, e.g., dropout from medical course or suicide in extreme cases [38].

4.1.2 Frequent exams

Frequent examinations are found to be another main reason for mental stress. A study revealed that the amount of stress almost doubled during or near the examination [25]. Moreover, due to frequent examination and assessments throughout the academic year, it becomes difficult for students to prepare for the exams properly; as a result, they get an average or poor grade [39]. Adults are motivated to learn mostly by internal factors, but external sources such as assessments also contribute strongly to motivate the learner to learn [40]. Too many examinations do not let students study deep, and they failed to produce intended outcome or good grades, hence becoming demotivated and distressed [41].

4.1.3 Inadequate feedback

Dahlin et al. [10] mention that insufficient feedback is also related to increased distress of students. It is very crucial to give effective feedback to students because it enables the learner to analyze their actions and helps them plan for the future; learners can be confused if left unsupervised [42]. Effective feedback practice from teachers permits students to develop positive insights about the task, and corrective feedback is essential for effective learning; without it the level of performance attained is lower [40].

4.1.4 Lack of time

In a semi-structured interview-based study, students revealed that huge academic tasks render them to have limited or no time for sleep and recreational activities; this lack of sleep might reduce the emotional well-being of students [43]. Due to high academic demands of medical education, most of the medical students fail to take time out for physical activities like exercise and other healthy activities [39]. People who have minimal physical activity are at higher risk of mood disorders like depression, anxiety, and stress [44]. Medical students get fewer opportunities for extracurricular activity, and that might have a negative effect on their mental health. Due to lack of time and the heavy burden of study, students could not find enough time for self-care; they are not able to take proper sleep and time for leisure activities which have a further bad effect on their well-being [45].

4.2 Transition

The literature offers evidence of the association between transitions and students' mental distress [5, 7, 10, 16, 31]. Transition is a dynamic process in which students experience cultural, social, and cognitive challenges while passing from a familiar to a less familiar environment. The medical curriculum is interrupted by two major transitions, first from the high school to the first year of medicine and another from preclinical to clinical, i.e., third year. Dahlin et al. [10] explored the distress among different years of students and found higher mental distress among first-year and third-year students than senior level year students.

4.2.1 Transition from high school to the first year of medicine

Students of the first year are overburdened with huge subjective curriculum, the pace of study is too fast, and they have little time to cover the syllabus. However, Dyrbye et al. [20] argued that many junior students might face the challenges of

being displaced from friends and family and experience difficulty in adjusting to a new environment along with heavy academic toll. So this high mental distress might be a part of the adjustment process to the new educational setting. According to the U-curve theory, this stage of adjustment is known as “culture shock” in which a medical student faces isolation, stress, anxiety, and emptiness [46, 47]. The successful adjustment at this stage depends on the self-confidence of students in their ability to cope with the stressors [48, 49]. In this stage, a student must face numerous challenges to adapt in a new environment as well as meet academic demands [48, 49]. So, in this context, self-efficacy seems to be the most suitable principle to deal with stress [50]. Bandura [21] concludes that cooperative learning strategies, in which learners work together and help one another, tend to improve both self-efficacy and academic achievement. Furthermore, constructive feedback is also important in developing self-efficacy in students [21].

4.2.2 Transition to clinical phase

A study done in a Thai school revealed a higher mental stress among third-year medical students [5]. Students are susceptible to become depressed during their initial clinical years of study when they rotate through the hospitals, because at that time students often detach from their friends and peer group and must work with constantly changing groups of residents and attending physicians at different hospitals [43]. Furthermore, clinical rotations anticipate a number of stress-provoking tasks, such as interactions with senior doctors and staff during ward rounds; dealing with patients, diseases, and death may also contribute to the poor mental health of medical students during their initial clinical years [15], because at this stage, students are not able to contribute enough to the patient care which makes them feel insecure about not having enough knowledge and skills [43]. Students, when entering into the clinical stage, are not confident enough to communicate effectively with clinical staff and are hesitant to participate in teamwork. It is evident that stress has been associated with poor communication, reduced quality of patient care, and medical errors [51].

4.2.3 Lack of communication skills

Students find it difficult to deal with newly added tasks and interacting with critically ill patients. Undergraduate curriculum mostly does not contain any information about communication skills. Effective communication builds a strong relationship between students, clinical staff, and patient which ultimately reduces the distress of students and enhances learning [52], and this will ultimately affect the quality of care delivered to the patient and quality of life [53]. These transitions might have negative effects on the learning process due to the lack of social interaction. Students who are distressed may face isolation and stigma which further affect their learning. Social constructivism theory describes that the adult learner learns through interaction and collaboration with other people in their natural setting [54]. Students learn better when they interact with their friends and peers regularly [55].

These large changes during the period of transitions need coping strategies in order to function effectively in the new environment. Critical reflection is the most desirable quality for a smooth transition [56, 57]. Experience is converted into learning by reflection, and this process can be improved by the cooperation of a facilitator or teacher [58]. Encouraging reflection in learners will lead to the development of reflective practice which is a significant element of

professionalism [59]. Learners should be involved in assessing their own learning process. Critical reflection on experience promotes deep and self-directed learning among students [40]. Mann [53] argues that introduction of activities like reflective portfolios, feedback, and peer review helps students cope with the stress during the transition and avail opportunity of learning during the transition phase. It is also noted that early introduction of clinical medicine also aids to stimulate smooth transitions [60].

4.3 Miscellaneous causes of mental distress

In addition to the aforementioned reasons, some other causes are also mentioned in the literature, e.g., personal life events, the death of family members, marriage, the birth of a child, family history of depression, etc. These reasons are also recognized to contribute to depression, anxiety, and stress in medical students, the same as the general population [61]. Financial problems are another factor mentioned in various studies, as a cause of increased stress levels in medical students [25]. A study discovered that the poorer the background, the more stress is experienced by students [25]. Medical education is considered a costly course which is also associated with other demands such as expensive textbooks, suitable clothing, and medical equipment. Some medical students suffer financial problems. Long academic hours do not allow students for part-time jobs to fulfill their financial needs [15]. Finances would be one of the main factors of the distress among students. As a medical educationist, we cannot do much about this issue, but we can suggest stakeholders create more scholarship opportunities for students.

4.4 Educational interventions that contribute to student well-being

Literature is largely focused on the efforts to improve student mental health through improving access to mental health provider and decreasing the stigma to mental health treatment and implementing of wellness programs. But there are only a few studies focused on innovative models that build to address the root causes of stress, i.e., academic related. The few most frequent curricular-related recommendations to improve the well-being of students are as follows.

4.4.1 Grading system

Implementation of the pass/fail grading is the most common curricular innovation mentioned in the literature. Reed et al. [60] found in a multi-institutional study that levels of mental distress are higher in students of the medical institute that used grading system with three or more levels than the students of the medical institute that used pass/fail grading [62]. Students always do a competition for getting better grades, and that consistently caused distress. Implementation of the pass/fail grading system, especially during the initial 2 years of medical school, helps students not to over-occupy themselves with competition for the high grade [15].

4.4.2 Clear learning objectives

Evans and Brown [61] proposed that students can be helped to reduce academic burden by offering them a clear learning objective so that students will know what they have to learn. It reduces the distress and thus fosters the well-being of students [63]. A predetermined clear learning objective not only lets students focus on them but also motivates them to achieve those [64].

4.4.3 Teaching strategies

Offering a variety of teaching strategies for delivering of course material such as small group activities, team-based learning, and flipped class is also known to reduce mental distress [65]. Small group learning is a more effective tool in gaining student-teacher bonding than didactic traditional lectures and thus helps the transfer of knowledge efficiently [66]. Furthermore, a small group setup provides a secure state in which students can argue and discuss their perceptions and assumptions. This problem solving and peer interaction can result in deep understanding; group discussion complements the situational learning of professionalism [66] which is known to enhance the well-being of students [57].

4.4.4 Self-efficacy and critical reflection

The practice of self-efficacy and reflection also mentioned reducing stress among medical students. The introduction of the reflective practice for students causes them to become the self-directed learner, and they become responsible for their own learning, which greatly alleviates mental distress [67]. The most frequently used tools for reflection are reflective journals, reflective dialogical exercises, and portfolios [68]. A learner should be involved in reflective practices because it provides them a chance to assess their own learning style. Reflection allows students' knowledge to be actively integrated and thus encourages self-directed, deep, and continued learning [55]. Problem-based learning (PBL) is known to promote self-efficacy and self-directed learning and hence endorse easy transitions during medical education [67].

4.4.5 Vertical curriculum

Vertical curriculum, which is defined as the assimilation between the basic science and clinical segments of the curriculum [64], is known to reduce mental distress because in that there is the early introduction of clinical medicine and students can relate theory to practice [69]. Early exposure of students to clinical medicines gives them instantaneous opportunities to apply the basic science knowledge to the clinical setting and help them in smooth transition through their educational journey [64].

4.4.6 Longitudinal electives

Longitudinal electives (e.g., communication skills or coping with stress) and other community-based activities seem promising in reducing stress among students [69]. Stress reduction teaching modules or electives intended to raise self-awareness and self-reflection and hence engage in self-care [26].

4.4.7 Promoting professionalism

Professionalism in medicine can be described as the collection of values, attitudes, and behavior that a health professional show when they deal with a patient, colleagues, and society [70]. Brazeau et al. [26] observed a positive relationship between medical mental well-being and professionalism [71]. Professionalism is mostly considered as a part of the hidden and informal curriculum [72]. The inclusion of professionalism in the formal curriculum is relatively a newer concept, but it becomes today's requirement [73]. Every medical institute should develop their own institutional specific curriculum for professionalism with faculty and students' help along with a structured teaching and learning methods and assessments [18].

5. Conclusion

Medical students experience a substantial amount of distress during their training, which has been shown to contribute to substandard academic performance, dishonesty, pessimism, and substance abuse [20]. A good physician requires the sound mental health to nurture and increase compassion, professionalism, and tolerance [20]. The main stresses identified during literature search are academic related. An undue amount of stress during medical education had the negative effect on students, who might have experienced difficulties in social encounters and a lack of concentration which leads to increased frequency of blunders, carelessness, and negligence [45]. Poor psychological health not only upsets students' lives but also has undesirable effects on patients' care in the long run [39]. Increased frequency of depression and anxiety within medical professionals may put the future of health care in danger; it may cause reduced productivity, low quality of life, and learning difficulties which will ultimately have a negative effect on the quality of patient care [20]. Depression, anxiety, and stress can have profound negative effects on the learning abilities of students [24], and this will ultimately affect the quality of care delivered to the patient and quality of life [53]. Evaluation of the literature shows that students and doctors who are suffering from mental distress are more likely to have poor professionalism, ranging from cheating, plagiarism, and providing substandard patient care [45]. So as a medical educator, this is a real state of urgency to introduce innovation in the curriculum to improve mental health, for this effort existing literature on curricular factors may serve as a model.

6. Recommendation for practice

The recommendations to reduce mental distress among medical students are discussed as follows:

- Provide an engaging curriculum which offers different styles, e.g., small group tutorials, team-based learning, and flipped classes.
- Exams should be prescheduled with proper gaps between different subjects. Proper time off should be given to students between their clinical rotations so that they can relax.
- Promote reflective activities, e.g., reflective diaries and portfolios throughout the curriculum, and timely and constructive feedback should be provided to students.
- Early introduction of clinical medicine, so that students can easily relate theory to practice.
- Longitudinal workshops or module on communication skills and stress management should be part of the curriculum for the medical undergraduate to become self-aware of their own well-being during their course of training. Special presentations by the faculty should be given to students about challenges in work-life balance.
- Provide opportunities for extracurricular activities to students, and encourage students to promote their well-being with regular physical exercise and

sufficient sleep. Give students in the campus opportunity for sporting and cultural activities to lessen their distress.

- Include elements of professionalism in the core curriculum.

It is needed to convince stakeholders of medical institute, i.e., head of medical education and principal, that we need to establish a strong support system for students for counseling, with whom they can discuss their problems, whether it is related to their psychological health or academics. Merely identifying the mental distress of a student does not seem to contribute to reducing the psychological morbidity; it is crucial to provide personalized support to the stressed students once they are recognized [15]. Students are reluctant to take available support because of the stigma related to the mental illness; they are not comfortable enough in taking consultations from their own institution. Such students should be given a chance to have an off-campus psychological support or online help with full confidentiality. These support systems increase the awareness and practice of positive coping approaches. These distress management programs should advise students about the negative effects of mental distress on human functioning and enlighten students on how to recognize the sources of mental distress and how to manage it. These groups provide an opportunity to students to express themselves and to share their feelings fearlessly, and thus it decreases the possibility of burnout. Such support groups help students to realize that they are not the only ones who are suffering but many others are also in the same situation. It also gives them a chance to realize how their colleagues solve such issues. Students should be given the chance to express their vision on the curriculum, so that they can give their unique insights to curriculum committees. Regular feedback from students on teaching and training can play a vital role in reducing the stress among students [15, 74–77].

7. Recommendation for future research

The potential for mental health to improve medical undergraduates and graduates' professionalism is also mostly unexplored. Large-scale, prospective, multicenter, and hypothesis-based or phenomenological-based qualitative studies are much needed to provide effective and generalized evidence about this issue. Both quantitative and qualitative research should be done in the future to see the long-term outcomes of the curricular change project. Support and funding for such research program are also limited, which must be alleviated. Research studies to explore the causes and consequences of medical students' distress and to examine possible solutions are not only beneficial for the affected medical student but also useful for the patients to whom they deliver their services. Subsequently, the interventions to promote students' mental health will advantage the student, the physician, the patients, and the community as a whole.

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Conflict of interest

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