

SUICIDE THOUGHTS AMONG MEDICAL STUDENTS. A THEORETIC APPROACH

THEODOR PANTILIMONESCU¹, MAGDALENA IORGA²,
SOFIA SOCOLOV³, BEATRICE-GABRIELA IOAN⁴

ABSTRACT. Depression and suicide ideation represent a very important topic for students from medical schools. The studies proved that medical students are having higher rates of depression comparing to general population. Women are more prone to experience depression comparing to men and freshman students are more depressed as seniors. Avoiding medical and psychological assistance in case of depressed students is related to stigma, the lack of time, confidentiality and negative effects on professional life. Psychological tools are needed to be used in order to identify depression, burnout, anxiety and ideation thoughts among medical students and online intervention should be practiced. The aim of the study is to present a theoretical approach of this topic, focusing on factors influencing the suicide ideation among this population.

Keywords: *medical student, stress, depression, suicide thoughts*

REZUMAT. Gânduri suicidare la studenții la medicină. O abordare teoretică. Depresia și gândurile suicidare la studenții care urmează cursurile facultăților de medicină sunt teme des abordate. Studiile au arătat faptul că studenții mediciști au scoruri ridicate ale depresiei, comparativ cu populația generală. Femeile sunt mai predispuse să fie depresive și studenții din anul întâi mai mult decât cei din anul final. În cazul depresiei, evitarea obținerii suportului psihologic sau medical este cauzată de stigmatizare, lipsa timpului, confidențialității și efectele negative asupra vieții profesionale. Este util aplicarea instrumentelor psihologice pentru a identifica depresia în rândul studenților, precum și a anxietății, sindromului de epuizare profesională sau pentru a evidenția prezența gândurilor suicidare.

¹ MD student, University of Medicine and Pharmacy "Grigore T. Popa " Iasi, Romania, email: theodor.pantilimonescu@yahoo.com

² PhD, Associate Professor, University of Medicine and Pharmacy "Grigore T. Popa " Iasi, Romania, email: magdalena.iorga@umfiasi.ro (corresponding author)

³ MD student, University of Medicine and Pharmacy "Grigore T. Popa " Iasi, Romania, email: sofia.socolov@yahoo.com

⁴ PhD, Professor, University of Medicine and Pharmacy "Grigore T. Popa " Iasi, Romania, email: ioanbml@yahoo.com

Evaluarea online este, de asemenea, recomandată. Scopul studiului este de a prezenta un cadru teoretic, cu orientare către factorii care influențează ideea suicidară a acestei populații.

Cuvinte cheie: *studenți la medicină, stres, depresie, gânduri suicidare*

Introduction

Medical school is a period with important psychological distress. The way students are taught to cope with it is crucial for their future professional life, due to the fact that higher rates of burnout, depression, anxiety and suicide are reported by studies. The severe process of admission for medical faculty, the intensive curricula and the demanding theoretical knowledge and practical cases are related to a lot of psychological distress among medical students and rates of depression and suicide ideation are higher comparing to general population (Dyrbye et al, 2006). Compared with suicide deaths in other professions, the rates are 200 % higher in female physicians and 40 % higher in male physicians (Schernhammer and Colditz, 2004).

Medical students possess plenty of qualities that at a first glance wouldn't be associated with suicide or depression, as compared with other students from different areas of study those in medicine have the highest score in extraversion and agreeableness (Lievens et al, 2002), but the environment also has a powerful role in determining the future of an individual, in some cases regardless of one's strong suits. The setting medical school offers can be considered a risk factor for suicide as it implies long amounts of time dedicated to studying, high levels of stress, in a very competitive setting, where failure is blamed and rarely mentioned; making mistakes in managing their time could severely affect the students' outcome: medical students with low scores of *conscientiousness and high scores of gregariousness and excitement-seeking have very low chances of succeeding in their exams (Ludwig et al, 2015).*

The phenomenon of suicide ideation in studies. From student to physician

Medical students' scores of depression are 15–30 % higher than those of peers of similar age and level of education (Goebert et al, 2009). That is why, high rates of dropping out are registered by medical students (Gavrilescu et al, 2017a; Gavrilescu et al, 2017b).

A study of Dahlin et al (2005) revealed that the prevalence of depression among medical students was 12.9% and the obtained scores were 16.1% for women and 8.1% for men. A rate of 2.7% presented suicide ideation in one of the previous years. Another study including students from seven medical schools from USA showed that depression was identified for 49.6% of students and 11.2% reported suicide ideation. Burnout was the main factor associated with depression and suicide thoughts in this research. (Dyrbye et al, 2008).

Hays and all, in a study developed between 1989 and 1994 reported different results. The researcher identified that more men than women committed suicide and almost half of students were registered in the third year of study. Almost 40% left notes and more than 80% of suicide cases were having a psychiatric history (Hays et al, 1996).

Advancing in the final years in medical school does not correlate neither to an ability formed over time to manage stress better nor to a better mental state, as when students from the first year of medical school were compared to those in the third year it was observed that the number of students with risk of depression was higher in the final years (39 % in the third year) than at the beginning of their studies: 28.4 % in the first year. (Ludwig et al, 2015)

The medical training as a student is the ground stone of the next stage that follows in the pursuit of becoming a doctor: the residency. Although the responsibilities and the work hours increase during residency, the depression rate was found to be higher among medical students when compared to residents, which again indicates the vulnerabilities of those located at the beginning of their medical journey. (Geobert et al, 2009)

But the latter does not mean that residents are in a better situation: a study in which were analyzed the causes of death of medical residents in the United States from 2000 to 2014 places suicide as the second reason for death of resident doctors and as the first reason for the death of male residents, with higher risks at the beginning of the academic years and after winter holidays. (Yaghmour et al, 2017)

Just as it happens with students in medical school, moving forward with the training in the residency does not mean for the former students (now newly doctors) an upgrade of their well-being: if at the beginning of the first year in residency the rates of burnout, depression and sleep deprivation have certain values, at the end of the same year the data significantly changes for the worst, as chronic sleep deprivation increased from 9% to 43%, prevalence for depression changed from 4.3% to 29.8%, the most severe alteration being represented by the percentage of residents with burnout, which if at the beginning was 4.3% in less than one year it managed to reach 55.3 %. (Rosen et al, 2009)

Universities' strategies – curricula

But medical schools can turn from risk factors to healers, and one approach is embracing the pass-fail grading system, which is implemented by many medical schools in the United States, especially in the preclinical years. Students who are evaluated with pass-fail have lower levels of stress and an improved mental state by comparison with their peers who are evaluated with grades. (Reed et al, 2011)

A powerful example comes from the University of Virginia, where after the comparison between students who were graded and others who were evaluated using pass-fail system it was observed that students from the pass-fail class had lower levels of stress, were more satisfied about the quality of their education and their personal lives were highly improved, while the performance between the two classes wasn't affected by the evaluation method. (Bloodgood et al, 2009)

When Mayo Medical School changed the grading system for the first year to pass-fail, the effect was that students were under lower levels of stress, had a better collaboration with each other and the general mood was improved (Rohe et al, 2006), all these aspects being connected to the amount of suicidal thoughts.

A study conducted at Harvard University for more than 70 years shows that one of the most important factors in one's life quality and longevity is represented by the relationships and the connection to other people, as this influences the happiness of the person and the quality of the interaction can protect the general state of health and also has a powerful impact on the mental state of the person. (Vaillant, 2012) The findings of the study can also help medical schools and medical students alike, as it inspires a powerful message: only another person can lift one who's fallen. Student counseling is a widely accepted method with great benefits, but when it is combined with faculty members who are educated about the students' stress levels and feelings, together with a specific curriculum and study materials so that students have a better understanding about what they are experiencing the results can be amazing: the number of students with depressive symptoms decreases to half and those with suicidal ideation decrease 10 times. (Thompson et al, 2010)

Hominum causa (omne) ius constitutum est – (every) law has been created for the benefit of men - and sometimes laws offer the support needed to fix otherwise unsolvable issues. The State of Missouri is the first one in the country to introduce a law that addresses issues such as suicide and depression in the medical field – Missouri House Bill 569, named „Show-Me Compassionate Medical Education Act” - which received a powerful support from the community (including medical professionals, professors and even parents of a medical student who died by suicide three weeks before graduation). The bill encourages research

in the field of mental health in order to find solutions to the risks faced in the medical school, it proposes August 28 as the „Show-Me Compassionate Medical Education Day" and it creates the "Show-Me Compassionate Medical Education Research Project Committee" with the purpose to study the stress in medical schools and to find ways to decrease the level and also to gather data from the students regarding their mental health.

Taking care of students shouldn't end with the graduation of medical school. A great number of resident doctors suffer from sleep deprivation, and research suggests that sleep deprivation (present in 85.9% of the evaluated doctors) and chronic sleep deprivation (present in 63.2% of the cases) can be associated with depressive symptoms. (Al-Maddah et al, 2015)

The cause of the many struggles faced by doctors is very difficult to quantify, but more approaches try to improve the current situation: one example comes from the University of California, San Diego School of Medicine which in 2009 launched an initiative aimed at raising awareness about depression and trying to prevent suicide, where the focus was not only on students but also on residents and faculty physicians. The program consists of two stages, one is represented by online screenings done with specialized software (made by the American Foundation for Suicide Prevention), while the second one is represented by an educational campaign which aims to inform about depression, risk of suicide and burnout; the successful initiative was welcomed by the medical community and it represents one of the first programs of this kind. (Moutier et al, 2012)

Both Mayo Clinic and Stanford University launched initiatives promoting physicians' well-being: the Stanford approach is meant to pull away from the doctors' shoulders the burdens of certain daily tasks that can't be completed by them due to many working hours, while the Mayo Clinic Physician Well-Being Program is designed to promote wellness in all aspects of the doctors' life (both personal and professional) with the help of physicians from multiple specialties.

Intervention strategies – online tools

From the available information two important questions arise: what makes the future medical professionals (who need to alleviate the suffering of others) feel like they need to end their lives and most importantly how can the cause be diminished? Even those who heal need sometimes to be healed.

The barriers identified in avoiding medical treatment are the lack of time, stigma, lack of confidentiality and a potential negative impact on professional life that is why developing programs to online survey of medical students are needed. An individualized and anonymous web-based program developed by Downs et al (*the Healer Education Assessment and Referral (HEAR)*)

Program) showed that an online tool is effective in detecting several medical students with suicidal ideation who were not in psychiatric treatment, and succeed in engaging them in mental health treatment. (Downs et al, 2004) In a study one of the authors identified that also cost, fear of documentation on academic record and fear of unwanted intervention were reported as barriers in looking for professional help (Givens and Tjia, 2002) so depression as the main cause for suicide ideation remains undertreated.

The value of human life cannot be resumed in percentages in a study or comprehended in statistics, but what all the research suggests is that a great problem exists regarding the pressure put on the mental health of medical students and all approaches should be considered in order to change the status quo on how reaching for help is perceived, not as a weakness but as a sign of great strength. The principle of non-maleficence is as important now as it was during the time the „Hippocratic Corpus,, was written, but in the present along with the care for the patient a new dimension of the principle must emerge: also do not harm the medical professional, as the rewards for success in alleviating this issue are described in a several-thousand-year-old saying: „He who saves a single life, saves the world entire.”

Acknowledgments

This study was partially funded by a grant supported by University of Medicine and Pharmacy „Grigore T. Popa” of Iasi - *Centre de Reussite Universitaire*, Romania and *Agence Universitaire pour la Francophonie (AUF)*.

REFERENCES

- Al-Maddah, E.M., Al-Dabal, B.K., & Khalil, M.S. (2015). Prevalence of sleep deprivation and relation with depressive symptoms among medical residents in King Fahd University Hospital, Saudi Arabia. *Sultan Qaboos University Medical Journal*, 15(1), e78.
- Bloodgood, R.A., Short, J.G., Jackson, J.M., & Martindale, J.R. (2009). A change to pass/fail grading in the first two years at one medical school results in improved psychological well-being. *Academic Medicine*, 84(5), 655-662.
- Dahlin, M., Joneborg, N., & Runeson, B. (2005). Stress and depression among medical students: A cross-sectional study. *Medical education*, 39(6), 594-604.

- Downs, N., Feng, W., Kirby, B., McGuire, T., Moutier, C., Norcross, W., ... & Zisook, S. (2014). Listening to depression and suicide risk in medical students: the Healer Education Assessment and Referral (HEAR) program. *Academic Psychiatry, 38*(5), 547-553.
- Dyrbye, L.N., Thomas, M.R., & Shanafelt, T.D. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Academic Medicine, 81*(4), 354-373.
- Dyrbye, L.N., Thomas, M.R., Massie, F.S., Power, D.V., Eacker, A., Harper, W., ... & Sloan, J.A. (2008). Burnout and Suicidal Ideation among US Medical Students Medical Student Burnout and Suicidal Ideation. *Annals of internal medicine, 149*(5), 334-341.
- Gavrilescu I.M., Florea S, Chelaru A, Iorga M, Zugun-Eloae C. (2017). What is influencing students' thoughts of dropping out? Stress, depression and motivation among medical students. *Romanian Journal of Experimental and Applied Psychology, RJEAP, Special Issue, 8*(1), 349-355.
- Gavrilescu I.M., Iorga M, Zugun-Eloae C. (2017). Stressors, stress and depression among medical students *Romanian Journal of Experimental and Applied Psychology, RJEAP, Special Issue, 8*(1), 367-373.
- Givens, J.L., & Tjia, J. (2002). Depressed medical students' use of mental health services and barriers to use. *Academic medicine, 77*(9), 918-921
- Goebert D, Thompson D, Takeshita J, et al. (2009). Depressive symptoms in medical students and residents: a multischool study. *Academic Medicine, 84*(2), 236-241.
- Hays, L.R., Cheever, T., & Patel, P. (1996). Medical student suicide, 1989-1994. *The American journal of psychiatry, 153*(4), 553.
- Lievens, F., Coetsier, P., De Fruyt, F. and De Maeseneer, J. (2002), Medical students' personality characteristics and academic performance: a five-factor model perspective. *Medical Education, 36*, 1050-1056.
- Ludwig, A.B., Burton, W., Weingarten, J., Milan, F., Myers, D.C., & Kligler, B. (2015). Depression and stress amongst undergraduate medical students. *BMC medical education, 15*(1), 141.
- Moutier, C., Norcross, W., Jong, P., Norman, M., Kirby, B., McGuire, T., & Zisook, S. (2012). The suicide prevention and depression awareness program at the University of California, San Diego School of Medicine. *Academic medicine, 87*(3), 320-326.
- Reed, D.A., Shanafelt, T.D., Satele, D.W., Power, D.V., Eacker, A., Harper, W., ... & Sloan, J.A. (2011). Relationship of pass/fail grading and curriculum structure with well-being among preclinical medical students: a multi-institutional study. *Academic Medicine, 86*(11), 1367-1373.
- Rohe, D.E., Barrier, P.A., Clark, M.M., Cook, D.A., Vickers, K.S., & Decker, P.A. (2006). The benefits of pass-fail grading on stress, mood, and group cohesion in medical students. In *Mayo Clinic Proceedings* (Vol. 81, No. 11, pp. 1443-1448).
- Schernhammer E.S., Colditz G.A. (2004). Suicide rates among physicians: a quantitative and gender assessment. *American Journal of Psychiatry, 161*, 2295-2302.

- Thompson, D., Goebert, D., & Takeshita, J. (2010). A program for reducing depressive symptoms and suicidal ideation in medical students. *Academic Medicine, 85*(10), 1635-1639.
- Vaillant, G.E. (2012). *Triumphs of experience*. Harvard University Press.
- Yaghmour, N.A., Brigham, T.P., Richter, T., Miller, R.S., Philibert, I., Baldwin Jr, D. C., & Nasca, T.J. (2017). Causes of death of residents in ACGME-accredited programs 2000 through 2014: implications for the learning environment. *Academic medicine, 92*(7), 976.