



Research paper

Prevalence of anxiety and depression among domestic and foreign medical students in Poland

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ARTICLE INFO

Article history

Received 10 April 2020

Accepted 25 May 2020

Available online 16 October 2020

Keywords

Depression

Anxiety

Medical students

Doi

<https://doi.org/10.29089/2020.20.00125>

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ABSTRACT

Introduction: Depression and anxiety disorders are much more common among medical students than in the general population. Due to additional risk factors, foreign students may be particularly vulnerable. Despite this, there is still an insufficient number of studies analyzing the prevalence of mental disorders among foreign medical students, especially in Poland.

Aim: The aim of the study was to assess and compare the prevalence of anxiety and depression disorders between domestic and foreign medical students in Poland.

Material and methods: An anonymous internet survey containing questions about socio-demography and the Hospital Anxiety and Depression Scale questionnaire was distributed among students. Based on the field of study and country of origin, participants were divided into 3 groups – Polish medical student group (PMG, $n = 214$); foreign medical student group (FMG, $n = 59$) and control group, which were Polish students of other faculties (CG, $n = 476$). The study groups were compared using the χ^2 test.

Results and discussion: The prevalence of depression disorders was 30%, 31% and 28% (PMG, FMG and CG, respectively). No statistically significant difference was observed between the study groups ($P = 0.77$). The prevalence of anxiety disorders was 57%, 90% and 59% (PMG, FMG and CG, respectively). Anxiety disorders were more common among FMG as compared to PMG and CG ($P < 0.01$ in both cases).

Conclusions: The prevalence of depression and anxiety among medical students in Poland is high. Foreign medical students appear to be particularly vulnerable to anxiety disorders.

1. INTRODUCTION

Depression and anxiety disorders are much more common among medical students than in the general population.^{1,2} A meta-analysis published in 2016 shows that the global prevalence of depressive symptoms among this social group is about 27%.¹ In turn, the latest meta-analysis from 2019 showed that 34% of medical students worldwide suffer from anxiety disorders.² Among causes of medical students' poor mental state, the most frequently mentioned were excess of study obligations, sleep deprivation and academic pressure (discussed in Quek et al. and Brenneisen et al.^{2,3}).

The limited available data suggests that in Poland mental disorders among medical students are also a common problem. Marek et al. at the Medical University in Gdańsk showed that 41% of students presented with anxiety and 16% had depression symptoms.⁴ Seweryn et al. reported a higher prevalence of depression in Polish students of the Medical University of Silesia (56%) compared to Portuguese and German medical peers.⁵

Moreover, medical studies abroad are becoming increasingly popular. Foreign students, in addition to the risk factors for developing mental disorders that are typically associated with their field of study, are also exposed to additional factors related to temporary emigration.⁶ Therefore, they may be more susceptible to the development of such disorders.

Recently, Akhtar et al. reported a prevalence of up to 49% for anxiety disorders and 26% for depression among foreign medical students in Germany, both on at least moderate levels.⁶

However, there still exists an insufficient number of studies analyzing the prevalence of mental disorders among foreign medical students, especially in Poland.

2. AIM

The study aim was to assess and compare prevalence of anxiety and depression disorders between domestic and foreign medical students in Poland.

3. MATERIAL AND METHODS

In 2019, an anonymous internet survey containing questions about sociodemography and the Hospital Anxiety and Depression Scale (HADS) questionnaire was distributed among students of a single academic center.

Data from 749 students was analyzed. Based on their field of study, participants were divided into three groups. The first group was Polish medical student group (PMG), that consisted of Polish students of the Medical Faculty, who study in the Polish language ($n = 214$). The second group was foreign medical students group (FMG), that consisted of students studying at the English Division of the Medical Faculty, pursuing a study program in English ($n = 59$). Both Polish and foreign students can enroll in this course, thus students from Poland were excluded from

Table 1. Sociodemographic data.

	PMG	FMG	CG
Sex, $n(\%)$			
Female	144(67)	34(58)	308(65)
Male	70(33)	25(42)	168(35)
Age, mean \pm SD	22.39 \pm 2.24	22.02 \pm 2.54	22.36 \pm 2.56
Country of origin, $n(\%)$			
Poland	214(100)	0(0)	476(100)
Sweden	0(0)	37(63)	0(0)
United Arab Emirates	0(0)	12(20)	0(0)
Germany	0(0)	4(7)	0(0)
Other	0(0)	6(10)	0(0)

FMG group based on the declared country of origin. The control group (CG) consisted of Polish students not studying at the Medical Faculty ($n = 476$). Table 1 presents the sociodemographic characteristic of the sample, with respect to group classification.

Depressive and anxiety symptoms were assessed with the HADS,⁷ which is divided into an anxiety (HADS-A) and a depression (HADS-D) subscale with 21 points as the maximum score for each subscale. The cut-off score both for depression and anxiety disorders in this study was the standard 8 points.⁸ Results in the borderline range of 8–10 points were qualified as 'mild disorder' and above 10 points as 'moderate to severe disorder'.⁹

The χ^2 test was used to compare prevalence of depression and anxiety disorders between study groups. The same test was used for post-hoc analysis. Therefore, a total of 5 comparisons were made and, after applying the Bonferroni correction, the level of significance for all tests was $P < 0.01$.

4. RESULTS

Results from the analyses showed that the prevalence of depression disorders was 30% among PMG (mild 16%, moderate–severe 14%), 31% among FMG (mild 19%, moderate–severe 12%) and 28% among CG (mild 14%, moderate–severe 14%). The groups did not show statistically significant differences ($P = 0.77$).

The prevalence of anxiety disorders was 57% among PMG (mild 16%, moderate–severe 41%), 90% among FMG (mild 20%, moderate–severe 70%) and 59% among CG (mild 25%, moderate–severe 34%). The groups differed significantly ($P < 0.01$). Anxiety disorders were much more common among FMG compared to PMG and CG ($P < 0.01$ in both cases). There was no significant difference between PMG and CG ($P = 0.58$).

5. DISCUSSION

The high prevalence of depression disorders that we noted among PMG was in line with current global estimates¹ and was also within the scope of results previously described in Polish literature.^{4,5} On the other hand, as much as 57% of the anxiety disorder prevalence observed among this group of re-

spondents was higher than the latest global estimates.² Similarly, a lower prevalence was recently reported in Poland.⁴

However, occurrence of both depression and anxiety disorders among PMG did not prove to be more frequent than among CG. Differences between medical and non-medical students were also not reported in the most recent meta-analysis and reviews. Although, it should be noted that there are still some doubts in this respect.^{1,2}

The FMG significantly differed from the other two study groups regarding occurrence of anxiety symptoms. As per previous assumptions, anxiety disorders in this group turned out to be the most common – the prevalence reached 90%. Reasons for the higher prevalence of anxiety disorders among this group may include culture shock, stress resulting from studying at a new university, homesickness and lack of adequate social support in a new place (discussed in Akhtar et al. and Popescu and Buzoianu^{6,10}). Although the result obtained in this study is numerically higher than recently reported by Akhtar et al.,⁶ it seems that both studies indicate a relatively high level of anxiety symptoms among foreign medical students. Different results were observed among medical students in Kazakhstan – there, the prevalence of anxiety disorders among domestic students was estimated at 23% and for international students 21%.¹¹ However, it should be taken into account that only first-year students took part in this study and the group of international students were from a single country – India. In turn, our study as well as Akhtar et al.⁶ analyzed students of all years and foreign students were from different countries, which could be an important confounding factor.

At the same time, contrary to the original hypothesis, prevalence of depressive disorders among FMG was not definitively higher than other study groups. Similarly, the Kazakh study failed to show a higher prevalence of depression among international students.¹¹ In our study and others, the prevalence of depressive disorders among foreign students was similar, accounting for approximately 30%.^{6,11}

In this work, HADS was used to assess depression and anxiety disorders. Although it was originally designed for use in hospital wards, it is currently a method widely used in survey screening of various populations, including medical students.^{1,2} Despite this, it should be noted that this type of assessment is somewhat superficial and only a medical examination can provide a reliable diagnosis of mental disorders.

6. CONCLUSIONS

The prevalence of depression and anxiety among medical students is high. Foreign medical students appear to be particularly vulnerable to anxiety disorders.

Conflict of interest

None declared.

Funding

None declared.

Ethics

The study protocol was approved by the local Bioethics Committee (No 52/2019).

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