

CROSS-SECTIONAL STUDY AMONG MEDICAL STUDENTS IN LATVIA: DIFFERENCES OF MENTAL SYMPTOMS AND SOMATIC SYMPTOMS AMONG LATVIAN AND INTERNATIONAL STUDENTS

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ABSTRACT

Introduction. This research aims to determine the prevalence of mental symptoms (depressive symptoms, anxiety and adjustment disorders) and somatic symptoms among medical students at Riga Stradiņš University in Latvia, as well as to display the differences between local and international medical students.

Methods. A cross-sectional study was conducted by means of online-based questionnaires among medical students in their 1st, 4th and 6th years studying in Riga, Latvia, during March 2017. The mental and somatic symptoms were screened with the PHQ-D Option C (PHQ-15, PHQ-9, GAD-7). Symptoms of adjustment disorder were obtained by the ADNM-6. Medical students were divided into three groups according to their answers of the PHQ-D: Group A: no symptom, group B: a single symptom, group C: multiple symptoms. A general questionnaire and a questionnaire regarding stressful life events over the past half-year were distributed additionally.

Results. 67 (40.1%) participants were Latvian students; 100 (59.9%) were international students. 23 (34.3%) Latvian students were in group A, 20 (29.9%) in group B, 24 (35.8%) in group C. 51 (51%) international students were in group A, 34 (34%) in group B, 14 (14%) in group C. Latvians displayed statistically significantly more health-related symptoms (0.003). 11 (11%) international students who reported a stressful life event over the last half-year were in group C. 21 (31.3%) of Latvian students who reported a stressful life event over the last half-year were in group C. 73 (43.7%) of all students had experienced stressful life events and displayed troubles adjusting to them. 65 (63.1%) students of the two groups with a stressful life found the event to have a great burden on them, 63 (61.2%) were wondering whether it could happen again, and 73 (70.9%) tried to suppress their feelings.

Conclusion. Medical students in Latvia have a high prevalence of health-related symptoms. Latvian medical students display more health-related

symptoms and symptoms of adjustment disorder. Further research needs to be performed to investigate whether Latvians have a lower threshold for stressors or whether they are exposed to more stressors than international students. The high prevalence of symptoms of adjustment disorder may impact the prospective patient-doctor relationship and the treatment outcome.

Keywords: *cross-sectional studies; depressive disorder/etiology; medical education; medical students; anxiety; adjustment disorder; mental health*

INTRODUCTION

Medical students are known to have high levels of depressive symptoms and anxiety [1, 2]. Depressive symptoms and anxiety can be described as mental symptoms. Increased mental symptoms are often connected with increased somatic symptoms [1, 2, 3]. No consistent value for mental distress among medical students are present [4]. A previous research among the group of tested medical students suggests clinically relevant depressive symptoms among 23.5% [5]. This research aims to determine the prevalence of mental symptoms, somatic symptoms and symptoms of adjustment disorder among medical students in Latvia as well as to display the differences between local and international medical students.

MATERIAL AND METHODS

Subjects. A cross-sectional study was conducted by means of online-based questionnaires among medical students studying in Riga, Latvia, during March 2017. The questionnaires were distributed anonymously among 1st, 4th and 6th year students to assess changes throughout the educational process. The questionnaires were distributed during the middle of the semester in March 2017 to avoid falsified results during the exam period. The study was approved by the medical ethics board of Riga Stradinš University, Latvia.

Study variables. The mental symptoms were screened with the PHQ-D Option C and the ADNM-6. The PHQ-D Option C consists of three questionnaires regarding somatoform disorders (PHQ-15), depressive disorders (PHQ-9) and generalized anxiety disorders (GAD-7). No control was performed by doctors; therefore, somatoform disorders will be referred to as somatic symptoms, depressive disorders will be referred to as depressive symptoms and generalized anxiety disorder will be referred to as anxiety. The questionnaires PHQ-9, PHQ-15 and the GAD-7 had cut-off scores (Table 2).

The PHQ-15 consists of 15 items which measure the burden of common somatic symptoms. The validity and reliability are well tested and proven [6].

The PHQ-9 consists of 9 items which fulfil the key criteria for major depression according to DSM-5 and ICD 10. It is broadly used in the primary care setting as well as in research with a well-tested validity and reliability [7, 8]. The GAD-7 consists of seven items which assess the DSM-5 core criteria of generalized anxiety disorder with a well-tested validity and reliability [9].

The students were divided up into three groups according to their PHQ-9, PHQ-15 and GAD-7 replies: Group A: no symptom, group B: a single symptom, group C: multiple symptom.

A general questionnaire, a questionnaire regarding stressful life events over the past half-year and the ADNM-6 were distributed. The ADNM-6 is a validated screening scale for adjustment disorders [10, 11]. The questionnaire concerning stressful life events during the previous half-year consisted of 10 possible events: (1) no history of a stressful life event during the past half-year, (2) family conflict, (3) divorce of parents, (4) separation, (5) conflict in university/work life/ with roommates, (6) adjustment to university life, (7) immigration or moving to a new home, (8) financial problems, (9) illness or death of a loved one, (10) ill success or setbacks in the educational process. These ten answers made up five psychosocial clusters (Table 3).

The mental symptoms and somatic symptoms are summarized under the term “health-related symptoms” in this article.

Statistical analysis. The data was analysed with IBM SPSS Version 21.

RESULTS

167 (90.3%) participants filled out the questionnaires correctly. 67 (40.1%) were Latvian students and 100 (59.9%) were international students. The international students' origins were: 8 (8%) Finland, 41 (41%) Germany, 11 (11%) Norway, 17 (17%) Sweden, 22 (22%) others. Depressive symptoms among Latvian students were present in 28 (41.8%) students, somatic symptoms in 27 (40.3%) and anxiety in 21 (31.3%) students. Depressive symptoms among international students were present in 20 (20%) students, somatic symptoms in 36 (36%) and anxiety in 14 (14%) students.

23 (34.3%) Latvian students were in group A, 20 (29.9%) in group B, 24 (35.8%) in group C. 51 (51%) international students were in group A, 34 (34%) in group B, 14 (14%) in group C. Latvians displayed statistically significantly more health-related symptoms (0.003). 13 (76.5%) of Latvian 6th year students and 20 (66.6%) of the 1st year students displayed single or multiple symptoms. 39 (69.6%) Latvian female students displayed health-related symptoms. 5 (53.7%) International students older than 27 years displayed health-related symptoms.

Table 1. Health-related symptoms' distribution among the sample.

Sample	Group A		Group B	Group C	Differences
	Complete sample	No symptom	Single symptom	Multiple symptoms	
	n = 167	n = 75 (44.9)	n = 54 (32)	n = 38 (22.8)	
Latvian students	n = 67				
Gender					
male	11 (16.4)	6 (54.5)	2 (18.2)	3 (27.3)	A > C > B
female	56 (83.6)	17 (30.4)	18 (32.1)	21 (37.5)	C > B > C
Age group					
18–20	27 (40.3)	8 (29.6)	7 (25.9)	12 (44.4)	C > A > B
21–23	16 (23.9)	9 (56.3)	3 (18.8)	4 (25.0)	A > C > B
23–26	23 (34.3)	6 (26.1)	9 (39.1)	8 (34.8)	B > C > A
>27	1 (1.5)	0 (0)	1 (100)	0 (0)	B > A, C
Study year					
1 st year	30 (44.8)	10 (33.3)	7 (23.3)	13 (43.3)	C > B > A
4 th year	20 (29.9)	9 (45.0)	6 (30.0)	5 (25.0)	A > B > C
6 th year	17 (25.4)	4 (23.5)	7 (41.2)	6 (35.3)	B > C > A
International students	n = 100				
Gender					
male	45 (45.5)	26 (57.8)	11 (24.4)	8 (17.8)	A > B > C
female	54 (54.5)	25 (46.3)	23 (42.6)	6 (11.1)	A > B > C
Age group					
18–20	35 (35.0)	17 (48.6)	14 (40.0)	4 (11.4)	A > B > C
21–23	26 (26.0)	15 (57.7)	7 (26.9)	4 (15.4)	A > B > C
23–26	32 (32.0)	18 (56.3)	12 (37.5)	2 (6.3)	A > B > C
>27	7 (7.0)	2 (28.6)	1 (14.3)	4 (57.1)	C > A > B
Study year					
1 st year	56 (56.0)	27 (48.2)	22 (39.3)	7 (12.5)	A > B > C
4 th year	20 (20.0)	12 (60.0)	4 (20.0)	4 (20)	A > B, C
6 th year	24 (24.0)	13 (54.2)	8 (33.3)	3 (12.5)	A > B > C

Group A: Individuals exceeding no cut-off score (PHQ-9 > 10, PHQ-15 > 10, GAD-7 > 10)

Group B: Individuals exceeding one cut-off score

Group C: Individuals exceeding two or more cut-off scores.

*Gender (other) excluded for statistical reasons

Table 2 displays the students' health-related symptom groups in connection with the psychosocial clusters. The vast majority of international students who reported a stressful life event over the last half-year was in group A or B. The vast majority of Latvian students who reported a stressful life event over the last half-year was in group B or C.

Table 2. Health-related symptoms in distribution among psychosocial clusters.

Cluster	Group A		Group B	Group C	Differences
	Complete sample	No symptom	Single symptom	Multiple symptoms	
	n = 167 (100)	n= 75	n = 54	n = 38	
Latvian students	n = 67	n = 23 (34.3)	n = 20 (29.9)	n = 24 (35.8)	C, A > B
No stressful life event	16 (23.9)	8 (50.0)	5 (31.3)	3 (18.8)	A > B > C
Problems with family	28 (41.8)	7 (25.0)	13 (46.4)	8 (28.6)	B > A, C
Immigration	7 (10.4)	1 (14.3)	3 (42.9)	3 (42.9)	B, C > A
University life	32 (47.8)	12 (37.5)	6 (18.8)	14 (43.8)	C > A > B
Personal problems	28 (41.8)	9 (32.1)	8 (28.6)	11 (39.3)	C > A > B
International students	n=100	n = 52 (51.0)	n = 34 (34.0)	n = 14 (14.0)	A > B > C
No stressful life event	34 (34.0)	23 (67.6)	8 (23.5)	3 (8.8)	A > B > C
Problems with family	41 (41.0)	20 (48.8)	14 (34.1)	7 (17.1)	A > B > C
Immigration	27 (27.0)	11 (40.7)	11 (40.7)	5 (18.5)	A, B > C
University life	56 (56.0)	20 (35.7)	22 (39.3)	14 (25.0)	A, B > C
Personal problems	25 (25.0)	10 (40.0)	10 (40.0)	5 (20.0)	A, B > C
Group A: Individuals exceeding no cut-off score (PHQ-9 > 10, PHQ-15 > 10, GAD-7 > 10)			Immigration (7)		
Group B: Individuals exceeding one cut-off score			University life (5,6)		
Group C: Individuals exceeding two or more cut-off scores.			Personal Problems (4,8,10)		

73 (43.7%) of all students had experienced stressful life events and displayed troubles adjusting to them (Table 3). Latvian students adjusted worse to previous stressful life events than international students. 65 (63.1%) student of the two groups with a stressful life found the event to have a great burden on them, 63 (61.2%) were wondering whether it could happen again and 73 (70.9%) tried to suppress their feelings.

Table 3. Symptoms of adjustment disorder to a stressful life event.

Total number of students with a stressful life event*	Latvian Students n=45	International students n=58	Total n=103	Difference
1. I keep having to think about the stressful situation and this a great burden to me	31 (68.9)	34 (58.6)	65 (63.1)	LV > INT
2. I wonder whether something like this could happen to me again	28 (62.2)	35 (60.3)	63 (61.2)	LV, INT
3. Since the stressful situation, I can no longer sleep properly	10 (22.2)	11 (19.0)	21 (20.4)	LV, INT
4. Since the stressful situation, I don't like going to work or carrying out the necessary tasks in everyday life	17 (37.8)	12 (20.7)	29 (29.0)	LV > INT
5. Since the stressful situation, I have withdrawn from my family or friends/acquaintances	15 (33.3)	13 (22.4)	28 (27.9)	LV > INT
6. I try to suppress my feelings because they are a burden to me	31 (68.9)	42 (72.4)	73 (70.9)	LV, INT

*The number is decreased due to missing answers about a stressful life event; the percentage and total are based on the response.

CONCLUSION

Latvian and international medical students have a heightened prevalence of mental and somatic symptoms. The level of depressive symptoms and anxiety are higher than in the general population [12, 13], yet it is doubtful that the mental symptom levels differ in respect to other specialities of higher education [14, 15]. Latvian students displayed a higher prevalence of health-related symptoms and symptoms of adjustment disorder. Further research needs to be performed to investigate whether Latvians have a lower threshold for stressors, or whether they are exposed to more stressors than international students. Latvia's growing social inequality [16] should be discussed as a major extrinsic factor contributing to the higher prevalence of health-related symptoms.

Table 3 displays symptoms of adjustment disorder. Answers 1, 2, and 6 can be described as a self-reflective burden. Answers 3, 4, and 5 can be described as a functional burden. On average 64.7% of the students suffered from the self-reflective burden, while 25.7% suffered from a functional burden. Chew-Graham et al. emphasize that medical students are reluctant to express signs of

vulnerability [17]. The difference between the functional and the self-reflective burden might be found in the secretive character of the latter, while a functional burden could express vulnerability and be subjectively regarded as a felt weakness of character by outsiders.

70.9% of medical students tried to suppress their negative feelings connected to the stressful life event because they were a burden. This could have a serious impact on the prospective treatment outcome, which emphasizes the patient-doctor relationship and the patient's subjective experience of "feeling felt" as the key factors for a successful treatment [18, 19]. It is questionable whether medical students who try to suppress their feelings can acknowledge the negative emotions of patients connected to their illness, display empathy and form a successful patient-doctor relationship. We believe medical students who do not acknowledge their emotions experience, have higher health-related symptoms, which opens up room for further research.

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