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## **COMPARISON OF DEPRESSION, ANXIETY AND STRESS OF SRI LANKAN MEDICAL UNDERGRADUATES IN LOCAL AND FOREIGN UNIVERSITIES**

### ***Introduction***

Depression, anxiety and stress is a leading problem in the modern society, especially in students. Among all students it is more prominent in medical students due to the volume and depth of medical studies. In a recent systematic review and meta-analysis, up to 27.2 % of medical students had depression globally. Also the prevalence of depressive symptoms is substantially higher among medical students than among individuals of similar age in the general population [4]. It's crucial for medical undergraduates to have a good a mental condition as it may adversely affect their performance and long-term health as well as the quality of care delivered in the hospitals and medical centers in the future when they work as doctors.

Sri Lanka has a limited number of medical university grants and because of this a large number of students enroll in foreign medical universities annually. And it should be also noted that a large number of foreign graduates return to Sri Lanka to work as doctors.

### ***Goal***

The objective of this study was to determine and compare the depression, anxiety and stress level of Sri Lankan medical undergraduates currently studying in local and foreign medical universities

### ***Material and Methods of research***

A cross sectional study was conducted with the participation of Sri Lankan medical undergraduates studying in Sri Lanka, Belarus, Georgia, Russia, China from 22nd to 26th March 2023. Snowball sampling technique was used to recruit participants. Sample collection from the medical undergraduates of foreign countries were conducted while they were residing in the particular countries during their mid semester to avoid the involvement of effects of the semester-end exams. An online self-reported questionnaire with Depression, Anxiety and Stress Scale-21 (DASS-21) was used to gather data anonymously. Data processing and analysis was done by using Google docs spreadsheet software.

The DASS-21 is the shortened version of the DASS developed by Lovibond and Lovibond to assess symptoms of depression, anxiety and stress among adults[3]. A validated Sinhala translation of DASS-21 was also included for the convenience of the participants. DASS-21 has 3 scales to assess depression, anxiety and stress with each scale containing 7 questions making a 21 – question scale [2]. The depression scale assesses dysphoria (a state of unease or generalized dissatisfaction with life), hopelessness, devaluation of life, self-deprecation, lack of interest/ involvement, anhedonia (inability to feel pleasure in normally pleasurable activities)

and inertia (a tendency to do nothing or to remain unchanged). The anxiety scale assesses autonomic arousal (chronic and persistent arousal of the autonomic nervous system that isn't caused by an underlying medical condition), skeletal muscle effects, situational anxiety, and subjective experience of anxious effect. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty in relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items and multiplying by 2 as the original scale was a 42 – item questionnaire [2].

The 3 scales in DASS-21 scoring system were counted separately and the depression, anxiety and stress of each individual participant was calculated separately. The values were grouped according to the countries where the participants study and percentages of depression, anxiety and stress was calculated.

The results of the research and their discussion

A total of 136 Sri Lankan medical undergraduates were enrolled from; Sri Lanka (39.71 %), Belarus (40.65 %), Georgia (10.29 %), Russia (3.68 %), and China (3.68 %). The total amount of Sri Lankan medical undergraduates who are studying in foreign medical faculties is 60.29 % of the total number of the respondents.

Among the foreign medical undergraduates, 60.98 % (n = 50) had symptoms of depression, 53.66 % (n = 48) had symptoms of anxiety and 46.34 % (n = 38) had symptoms of stress. Among the local medical undergraduates, 62.96 % (n = 34) had symptoms of depression, 59.26 % (n = 32) had symptoms of anxiety and 50 % (n = 27) had symptoms of stress.

Table 1 – Depression of medical undergraduates in local and foreign universities

	Local	Foreign				
		Total	Belarus	Russia	Georgia	China
Normal	37.04%	39.02%	39.66%	20.00%	35.71%	60.00%
Mild	7.41%	25.61%	25.86%	60.00%	14.29%	20.00%
Moderate	24.07%	20.73%	18.97%	20.00%	28.57%	20.00%
Sever	12.96%	6.10%	6.90%	0.00%	7.14%	0.00%
Extremely severe	18.52%	8.54%	8.62%	0.00%	14.29%	0.00%

Table 2 – Anxiety of medical undergraduates in local and foreign universities

	Local	Foreign				
		Total	Belarus	Russia	Georgia	China
Normal	40.74%	41.46%	37.93%	20.00%	42.86%	100.00%
Mild	9.26%	12.20%	12.07%	40.00%	7.14%	0.00%
Moderate	20.37%	21.95%	24.14%	20.00%	21.43%	0.00%
Sever	11.11%	13.41%	12.07%	20.00%	21.43%	0.00%
Extremely severe	18.52%	10.98%	13.79%	0.00%	7.14%	0.00%

Table 3 – Stress of medical undergraduates in local and foreign universities

	Local	Foreign				
		Total	Belarus	Russia	Georgia	China
Normal	50.00%	53.66%	55.17%	20.00%	50.00%	80.00%
Mild	5.56%	10.98%	13.79%	0.00%	0.00%	20.00%
Moderate	18.52%	24.39%	20.69%	80.00%	28.57%	0.00%
Sever	14.81%	8.54%	6.90%	0.00%	21.43%	0.00%
Extremely severe	11.11%	2.44%	3.45%	0.00%	0.00%	0.00%

31.4 % of the total number of respondents were final year students (5<sup>th</sup> year in local universities and 6<sup>th</sup> year in all the foreign universities). Responses of the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and local 5<sup>th</sup> year students were 13.9 %, 8.8 %, 17.5 %, 20.4 % and 8 % respectively.

Among foreign medicine undergraduates, depression, anxiety and stress was highest in Belarus. But number of responses from Georgia, Russia, China was comparatively low so it should be further studied with higher number of participants. When comparing the results of all foreign medical undergraduates with local medical undergraduates, the latter showed the highest counts with notably high depression and stress levels.

### **Conclusions**

The findings of the present study suggests that the depression, anxiety and stress are high in local medical undergraduates when compared with foreign Sri Lankan medical undergraduates. The reason for this difference could be certain educational methods and tough exam structure in local universities but it should be further studied by considering relevant demographics. However, it would have been better if there was an organized system to address the mental health issues of the participants, especially the ones with high risks. Both foreign and local universities should plan and implement a system for occasional screening and provision of psychological support from mental health professionals when necessary.

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## **THE EFFICIENCY OF STRESS COPING STRATEGIES USED BY MEDICAL STUDENTS AND ITS EFFECTS ON THE PREVALENCE OF PERSONALITY AND MOOD RELATED DISORDERS**

### **Introduction**

The study of medicine is considered one of the most stressful fields of study. It is a never ending and highly demanding career which leaves many students in a high risk of burnout [1]. According to studies, the estimated prevalence of stress among medical students is 28.5–78 % [2]. Most medical students tend to use harmful coping mechanisms or even completely ignore the effects of stress, not knowing that their overall health depends on it. [3] These students tend to show changes in their personalities, vulnerability and tend lead to suicidal ideations and depressive states [4].