

ORIGINAL ARTICLE

RELATIONSHIP OF PHYSICAL ACTIVITY AND DEPRESSION AMONG MILITARY AND NON-MILITARY MEDICAL STUDENTS

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Background: Military and medical environment when combined turn out to be notoriously relevant in regards to depressive symptoms due to cumulative significance of the risk factors involved in the two. This study was aimed to determine the prevalence of depression among military medical cadets and its comparison with non military medical students. **Methods:** Three-hundred undergraduate medical students of CMH Lahore Medical College were divided into two groups, 150 military medical cadets and 150 non-military medical students. Gotland Male Depression scale (GMDS) was used for depression. Physical activity was recorded in a detailed manner through questionnaire. Chi-square was used to compare the frequencies between groups and $p < 0.05$ was taken significant. **Results:** GMDS revealed that non military medical students have more depression, when compared with military medical students. We found significantly higher number of non-military medical student with depression as compared to military category ($p = 0.000$). We also found statistically significant results on the basis of duration and frequency of physical activity. There were significantly higher number of military students who were doing physical activity for longer duration ($p = 0.02$) and more frequently ($p = 0.007$) when compared with non-military medical students. **Conclusions:** We report higher prevalence of depression among non-military medical students compared to their military counterparts. Physical activity has positive impact on mental health. Those exercising regularly have better mood than those being sedentary.

Keywords: Physical activity, Depression, Medical students

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INTRODUCTION

Medical studies and training process are very stressful and they can be a significant cause of depressive symptoms among students.¹ Military training is also related with higher incidence of stress and depression.² Military and medical environment when combined is automatically going to be notoriously relevant in regards to depressive symptoms due to cumulative significance of the risk factors involved in the two. Why is this population particularly prone to these problems, is because of generally assumed factors like, academic pressure, hurdles during the medical/military journey, various challenges associated with transition of lifestyle.³ Prevalence of depression reported among medical students is 27.2%.⁴

Our culture, presume doctors as being able to manage longer hours, stressful working, emotional traumas on their own, and also force them to think so about themselves.⁵ Alike are the undergraduate trainers having existential stressors. Individuals viewing themselves as perfectionist, self critical and having artistic traits but at the same time making them vulnerable to depression.⁵

Medical students and military cadets, both are found reluctant in seeking professional or medical help regarding issues of depression or mental health, this

trend is followed all over the world.⁴⁻⁷ Even if help is sought, that's mostly from non medical or informal sources.⁶ Therefore, many studies have been done to determine substantial unmet need of mental health in military population. It is determined by various studies that help seeking for mental health problem is concerns about stigma. Self stigma and negative attitude towards mental health may be considered in this regard.⁶ About 40–60% of people, who could avail professional treatment, do not seek for it in the first place.⁷⁻⁸

Positive effects of physical activity and exercise on mood and mental health are well established. There are a lot of studies, claiming association of physical activity with general well-being, mood and depression.⁹⁻¹⁰ For disease prevention and obtaining best of health, physical activity plays an important role, both in providing psychological benefits and enhancement of emotional health.¹¹

Depression may affect students negatively, causing academic problems and creating issues in personal and family life, students may engage in immoral activities in order to get rid of the symptoms. It is therefore, essential to diagnose it earlier and provide adequate treatment and care.¹²

Our study is unique in a sense that, no such research has been done, especially in military. Moreover, our research population is different because it

comprises of military and non-military medical students in the same institute, such setups are very rare around the world.

In this study, we tried to find out the relationship of depression and physical activity among military medical cadets and there comparison with non-military medical students, in the population of undergraduates of a military medical institute.

SUBJECTS AND METHODS

This cross-sectional study was done at CMH Lahore Medical College and Institute of Dentistry, Lahore, after being approved by ethical committee.

Calculated sample size was 300. Non-probability convenient sample technique was used to recruit study participants, studying from 1st to final year of studies (total 5 academic years or classes). They were divided into two groups, 150 military medical cadets and 150 non-military medical students. From each year of study, students (n=60) from each class were chosen to participate, because each year has 30 military cadets, so for comparison equal number of 30 non-military medical students were taken randomly from each class, making the sample total of (n=300), i.e., (150 cadets, 150 civilians) from all the five years. Female students were excluded as there are no female cadets enrolled as medical students.

After explaining the purpose of study, written informed consent was obtained. The questionnaire

consisted of three parts: 1. Demographic profile 2. Information regarding physical activity, 3 Gotland Male Depression Scale. GMDS is a self rating depression scale which has 13 items covering psychological and physical symptoms of depression.¹³

Statistical analysis was performed using SPSS-21. Chi-square test was used to compare the frequencies between groups and to find out relationship between them, and $p < 0.05$ was taken significant.

RESULTS

Out of 300, there were 124 (41.3%) students in the range of 17–20 year, 166 (55.3%) in the range 21–24 year and 10 (3.3%) in 25–27 year age range.

Significant results were found on the basis of duration and frequency of physical activity. There were significantly higher number of military students who were doing physical activity for longer duration ($p=0.02$) and more frequently ($p=0.007$) when compared with non-military medical students (Table-1).

GMDS revealed that non-military medical students have more depression, when compared with military medical students. There were 52 (34.7%) non-military students with possible depression and 11 (7.3%) with clear sign of depression while there were significantly lower number of students (8, 5.3%) with clear sign of depression in military category ($p=0.000$) (Table-1).

Table-1: Comparison of study variables between military and non-military medical students [n (%)]

Variables	Non-military medical students	Military medical students	Total	p
Age (years)	17–20	61 (40.7)	63 (42.0)	0.15
	21–24	81 (54.0)	85 (56.7)	
	25–27	8 (5.3)	2 (1.3)	
Physical activity	Yes	111 (74)	126 (84)	0.03*
	No	39 (26)	24 (16)	
Duration of physical activity	None	39 (26.0)	22 (14.7)	0.02*
	10–15 min	32 (21.3)	44 (29.3)	
	30 min	33 (22.0)	46 (30.7)	
	>30 min	46 (30.7)	38 (25.3)	
Physical activity on the basis of frequency	None	40 (26.7)	22 (14.7)	0.007**
	Daily	32 (21.3)	56 (37.3)	
	Twice a week	30 (20.0)	30 (20.0)	
	>2 times a week	48 (32.0)	42 (28.0)	
Gotland male depression scale GMDS	No signs of depression (1–13)	87 (58)	126 (84)	0.000***
	Depression possible (13–26)	52 (34.7)	16 (10.7)	
	Clear signs of depression (26–39)	11 (7.3)	8 (5.3)	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

DISCUSSION

Military medical cadets have vigorous lifestyle to cope up with medical studies and military training. Which is why we assumed that they are more prone to depression and lie in vulnerable range, but according to our results, since they also are physically more active; due to sports, which are part of their daily life and discipline, they bear less depressive symptoms as recorded by GMDS. Our findings also support those of previous researches. We found that military medical students are more physically active and have less depression while non-military

students have more depression and are less active physically.

Our results are consistent with reviewed literature. Nasioudis *et al*¹² reported 39% of population of military under depression. We found very low percentage of depression (5.3%) in military medical students. High score of depression in civilian students’ maybe due to financial burden but according to a study by Honey *et al*⁵ there is no significant association of finances with depression.

Epidemiological researches suggest that physical activity is associated with decreased prevalence

of depression, men taking >12,500 steps/day had 50% lower prevalence of depression compared with the sedentary group.⁹ This supports our results.

Such investigations compel us to consider physical activity as treatment of depression.¹⁴ Similarly, other researches demonstrate physical activity as a preventive strategy in depression and treatment of symptoms.¹⁵ Whether physical activity is preventive against depression or depression limits the ability of an individual of being physically active is still not known.¹⁶ Some other studies reported that students not being able to meet recommendations of physical activity are more vulnerable to experience depressive symptoms.¹⁷ Elliot *et al*¹¹ revealed 15% college students have depression, 34% reported diagnosis in earlier school year and on an average only 10% college students received clinical services from their institute, higher levels of physical activity were related to less frequent feelings of hopelessness. Taliaferro *et al*¹⁸ showed that young people with highest frequency of physical activity experienced superior psychological well being. Camacho *et al*¹⁹ reported lack of exercise as a factor for development of depression in the later years. Mobily *et al*²⁰ stated that daily walking improved depression. Strawbridge *et al*²¹ reported protective effects of physical activity on depression, in a review article. Among civilian students, depression challenges may be more due to unfamiliarity with university life and transition to adulthood.²²

Physical activity as treatment of depression is underused in Pakistan, causes should be determined. Also motivation underlying exercise must also be considered.

CONCLUSION

We report higher prevalence of depression among non-military medical students as compared to their military counterparts. Physical activity has positive impact on mental health. Those exercising regularly have better mood than those being sedentary. Physical activity can be incorporated as prophylaxis in preventing depressive symptoms, or can be used as a self help strategy or adjunct modality in treatment of depression.

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