ORIGINAL ARTICLE

Mental Health and Chronic Fatigue Syndrome: Is Mental Health the Culprit Behind Your Fatigue?

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ABSTRACT

***Background and Objective*:** Mental health has proved to affect the physical and emotional aspects of one's life. Appreciation of its influence on the physical functionality and efficacy of an individual may provide better treatment plans and coping strategies. This study was designed to find out the frequency of depression, anxiety, and stress among medical students at different levels of education, taking gender differences into account and its relation to chronic fatigue syndrome.

***Methods*:** This cross-sectional descriptive study was carried out from October 2017 – March 2018. Standardized questionnaire was given to 270 MBBS students of Combined Military Hospital (CMH) Medical College, Lahore. The sampling method was non probability convenience sampling. The participants gave free consent. The data was analyzed using SPSS version 23.

Results: Out of the 270 candidates, 246 had fatigue. Females scored higher on both questionnaires and showed greater frequency of fatigue and mental health problems like stress [P = 0.004]. Over all mental health traits showed statistically significant association with chronic fatigue (P = 0.001).

Conclusion: Frequency of chronic fatigue among medical students suffering from anxiety, depression and stress is higher as compared to normal students. Female students suffer more from chronic fatigue syndrome, depression, anxiety and stress as compared to males. Strategies to evaluate and rigorously review medical student's mental problems, and devising appropriate coping mechanisms is essential for their well-being and optimum health.

KEYWORDS: Depression, Anxiety, Stress, Fatigue, Medical students, Chronic fatigue syndrome, Mental health.

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INTRODUCTION

Stress, anxiety and depression constitute a subject of rising concern among young medical students

and doctors. The evolution in lifestyle, dietary, sleep and working habits over time has profoundly affected the mental health of students in all areas of study, especially Medicine.[1] It is widely known that stress, burn out and emotional disturbance among medical students is higher as compared to non-medical students. This ultimately spills its negative effect in their academic performance.[2]

Despite better access to health care facilities, medical students' mental health is hardly taken care of. This not only influences the sensitivity of interaction of such students with their patients in future, but may also lead to overall decline in their optimum physical, social, academic, and intellectual performance at various levels of study and training.[3] A study states that nearly all patients with chronic fatigue syndrome (CFS) suffer some distress in social relations. Chronic fatigue patients complain lack of energy, motivation, asthenia, excessive sleep and drowsiness, and decreased daytime working capacity for prolonged periods of time. The United States Center for Disease Control and Prevention defines CFS as: at least 6 months of persistent fatigue that substantially reduces the person's level of activity. In addition, four or more of the following symptoms must occur with fatigue in a 6-month period: impaired memory or concentration, sore throat, tender glands, aching or stiff muscles, multi-joint pain, new headaches, un-refreshing sleep, and post-exertion fatigue.[4] Chronic fatigue syndrome constitutes a collection of heterogeneous symptoms which leads to frequent hospital visits by many people, especially women.[5]

As the diagnosis of this disabling condition is solely based on symptoms, its close association with many pathophysiological abnormalities renders it a multifactorial condition that may yet require exclusive diagnostic criteria. Estimates of the prevalence of chronic fatigue syndrome are varied depending on definition, population and study methods chosen.[4]

Fatigue and prolonged period of demanding cognitive activities can affect physical performance. Appreciation of the existence of chronic fatigue due to mental health problems amongmedical students can enhance positive impact on their lives as future health care provider.[6] Addressing such concerns will not only prevent the common problems such as burn out, undue anxiety, fear, depression, but can also decrease the rate of suicide, drug dependence and addiction among the young doctors.[7]

The rationale of this study is to investigate the prevalence of stress, anxiety and depression and its relation with chronic fatigue among medical students of CMH Lahore Medical College, taking gender differences into account.

METHODS

A cross sectional descriptive study with sample size of 270 MBBS students of CMH Medical College Lahore employing non probability convenient sampling technique was conducted. Study lasted for a period of six months. Ethical approval from ethical Board of CMH Lahore medical College was taken vide Letter number: 381/ERB/CMHLMC dated 17-05-19.

Two questionnaires were used for this study. The DASS21 Manual for Depression, Anxiety and Stress Scale (2nd Ed, Sydney: Psychology Foundation) that helped to assess the mental status of the participants by identifying traits of depression, anxiety and stress.

The second questionnaire, Chalder Fatigue Scale, standardized questionnaire developed by King's College London was used for the diagnosis of CFS based on symptoms experienced by the candidates. The sample size for the study was calculated using the WHO Sample Size calculator. Participants were ensured complete confidentiality for their responses and were set free to quit study at any point of time.

In addition, demographic details with information on the age, gender, and family income were obtained. Students provided information on commonly used indicator; family income [(< 50,000), (50,000-100,000) (100,000- 200,000) (> 200,000 per month)] as poor, middle class, upper middle class and elite class respectively. The criterion was based on the fact that parents were paying their study specific expenditures in addition to income adjusted for household.

STATISTICAL ANALYSIS

The data was entered and analyzed by using Statistical Package for Social Sciences (SPSS) version 23. Demographic information included gender, age, education, and monthly income of

parents. DASS 21 Questionnaire as obtained and filled by summing the scores of its questions. Each question was scored from zero (does not apply to me at all) to 3 (absolutely applies to me). Then sum of scores was calculated for each individual and termed as normal to severe status. In this study normal and mild cases where classified into one group as normal. The Chalder fatigue scale was scored by using bimodal scoring system. Respondents answered each question with one or zero to indicate the questions apply to them or not. Age and household income are quantitative variables. Gender and year of study are qualitative variables. To find the association between mental health traits; depression, anxiety and stress with fatigue, Chi-square test was applied. Results were considered significant if P-value was observed to be ≤ 0.05.

RESULTS

Out of 270 respondents, those who were normal on depression, anxiety and stress scale but suffered fatigue were 91 (33.7%), 96 (35.5%) and 69 (25.5%) respectively. Four percent of the students belonged to lower socioeconomic background, 39 (14.4%) belonged to middle income, 94 (34.8%) belonged to upper middle class and 136 (50.4%) belonged to elite class. The prevalence of the varying levels of mental health variables among the students and their correlation with fatigue are given with significant *P-value < 0.001* in Table-1. Out of total 246 (91.1%) participants that suffered from fatigue, highest level of fatigue 53 (34%) was appreciated in first professional students followed

Table-1: Association of mental health traits with fatigue.

Dispersion		Fatigue Yes	Fatigue No	P-value Pearson Chi-Square
	Normal	91 (36%)	3(12.5%)	
	Mild	44 (17.8%)	2(8.3%)	
	Moderate	64 (26%)	2(8.3%)	0.0001
	Severe	31 (12%)	4(16.5%)	
	Extreme severe	16 (6.5%)	13(54.1%)	
Anxiety	Normal	96(39%)	6(25%)	
	Mild	38(15%)	1(4.1%)	
	Moderate	71(28.8%)	4(16.5%)	0.0001
	Severe	26(10.5%)	5 (20.8%)	
	Extreme	15(6%)	8(33.3%)	
Stress	Normal	69(28%)	3(12.5%)	
	Mild	30(12%)	1(4.1%)	
	Moderate	88(35.7%)	6(25%)	
	Severe	42(17.0%)	3(12.5%)	0.0001
	Extreme severe	17(6.9%)	11(45.8%)	
Total		246(91.1%)	24(8.8%)	

Table-2: Frequency of Fatigue in MBBS Students Year-wise.

		Fatigue Scale		
		Fatigue	No fatigue	Total
Year of Study	1st year	53 (94%)	03 (5%)	56
	2nd year	52 (96%)	02 (3.7%)	54
	3rd year	41 (82%)	09 (18%)	50
	4th year	49 (90.7%)	05 (9.2%)	54
	5th year	51 (91%)	05 (8.9%)	56
Total		246 (91%)	24 (8.8%)	270

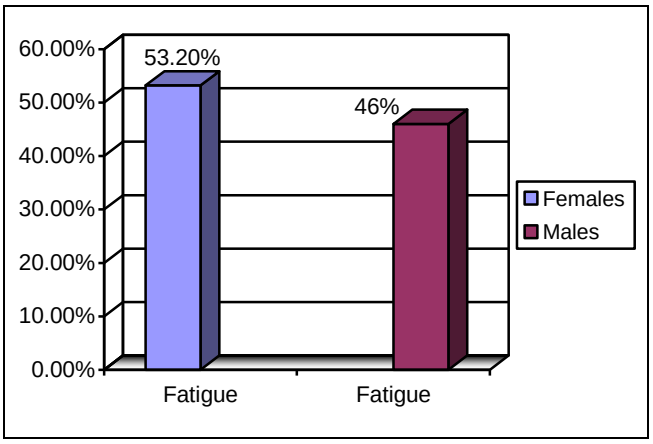

Fig.1: Frequency of fatigue among male and female students.

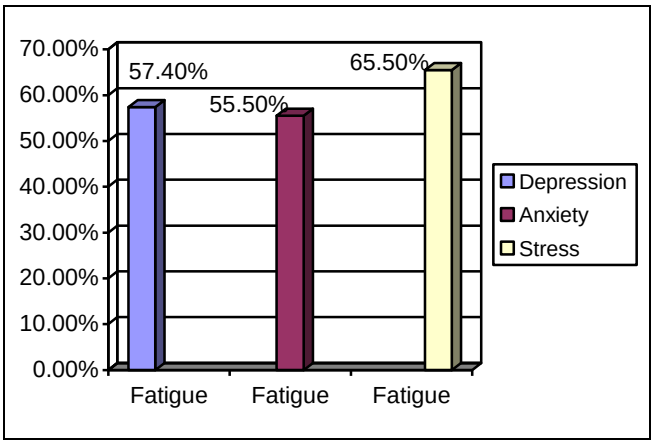

Fig. 2: Relation between mental health variables and fatigue.

by 52 (33.5%) in second year, 49 (31.6%) in fourth year 51 (32.9%) in final year, while the least (41%) fatigue cases were observed in third year of MBBS (Table-2). The frequency was higher in females than in males. The total percentage of female and male was 53.25% and 46% respectively (Fig.1). A total of 155 (57.5%) students presented with depression, 150 (55%) had anxiety and 177 (65.5%) were found to be stressed (Fig.2).

All mental health traits, depression anxiety and stress were found to be associated with fatigue *(P-value < 0.0001)*.

DISCUSSION

Medical students undergo a tremendous stressful transition when starting the medical field that is dynamic, competitive, and continuously advancing. This transition puts great amount of responsibility on students and adversely affect their mental health. It has been reported that medical students consequently suffer from depression, anxiety, and stress.[8] The medical field requires determined, focused and active individuals, both physically and mentally. The present study revealed positive association between all mental health traits, but stress stood out among the three variables, giving significant correlation with fatigue. According to studies conducted at various professional colleges in Karachi, medical students have stress level in high range compared to engineering, arts and commerce students in the same category.[9] Academic stress in medical students causes sleep deprivation, which in return affects their cognitive as well as physical performance.[10]

Mental health is an integral part of a person's functionality. It is the factor that makes us unique from all other species. It has long been established that mental health is as important as physical health in the determination of an individual wellbeing. Medical students may feel burned out and fatigued for prolonged periods of time not realizing that their perception, stress level, depression or anxiety might be the culprit behind. The findings of present study are quite similar with a study, which revealed that more than sixty percent of medical students were diagnosed with depression. This mental health trait was associated with stress full environment, which affects physically and mentally making the students exhaustive. Thus good control over these factors may alleviate the physical symptoms experienced by many students during their transition to more responsible health care provider in community.[11]

Healthy students often complain of being chronically fatigued and over worked due to continued assignments, tasks and tests during their hectic schedule. Depression, anxiety and stress was more in initial years of medical study as well as in the final year. These mental health traits seem to vary, but generally it is observed higher among first year candidates, which partially matches the present study. Similar findings were observed in a study, which revealed that over burdened, anxiety environment and busy schedules were main culprit behind high levels of depression, anxiety and stress.[12] Another study is in alignment with the findings of present study suggesting that medical studies are very demanding. Medical students had higher depression rates than the general population. Continuous competitive learning environment and expectations of parents result in high levels of stress among students. [13]

CONCLUSION

Chronic fatigue is found prevalent among the apparently healthy young medical students especially in females. Regardless of the year of study, nearly all students suffer from significant levels of stress, anxiety and depression. Stress management skills, coping strategies and methods to control anxiety and to avoid depressive thoughts must be taught and screened at medical schools.

LIMITATIONS OF STUDY

The study has some limitations. Firstly, the study tool depends on recall and self-reported measures leaving room for bias. Secondly, no systemic or biochemical examination was carried out on students to rule out any undiagnosed health issues. Data on prevalence of depression, stress and anxiety among the candidates before the commencement of their medical education is also not available, so we cannot determine how medical education might have influenced their mental health.

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CONFLICT OF INTEREST

None to declare.

FINANCIAL DISCLOSURE

None to disclose.

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Author's Contribution

TR: Conception of study, drafting of manuscript.

MAC: Important intellectual input.

AM, MGA, MA: Acquisition of data, drafting of manuscript.

BA: Interpretation of data, important intellectual input.

ALL AUTHORS: Final approval of the version to be published.