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CORRELATING INSOMNIA WITH EMOTIONAL INTELLIGENCE AND STRESS IN UNDERGRADUATE STUDENTS: A CASE STUDY AT LUMHS

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Abstract

Background: Insomnia is a multifactorial disorder mostly caused by psychological stress. Medical students tend to experience great loads of academic stress which leads to sleep disturbance. It has been found that stress has a significant negative correlation with emotional intelligence. This study aims to access the association among Insomnia, psychological stress and emotional quotient among medical undergraduate students.

Methodology: This comparative cross sectional study was limited to students of LUMHS, which included 167 participants. The data was collected through simple convenient sampling by using Regensburg's insomnia scale, perceived stress scale and emotional intelligence questionnaire to access the quality of sleep, stress levels and emotional quotient among undergraduate students respectively. Whole data was analyzed in SPSS (version 22.0).

Results: The study found out that 57.6% of medical students were insomniac. Analysis showed a positive significant relation between insomnia and EI with $p<0.01$. While no significant negative relation existed between stress and insomnia with $p=0.056$. Stress and EI shared a significant negative association with $p=0.007$.

Conclusions: Disturbed sleep and high stress levels individually affects one's emotional intelligence, but short term insomnia is not found to have association with stress levels

Keywords: medical students, insomnia, stress, emotional intelligence, emotional intelligence (EI)

INTRODUCTION:

Insomnia is defined as a sleeping disorder in which one may experience difficulty in falling asleep, staying asleep or getting a refreshing sleep (1)(2). It is concomitant with daytime after-effects. Even though insomnia is usually consequential to circadian rhythm, medicinal or psychiatric conditions, on contrary this can also be a primary anarchy. The primary insomnia is likely to occur in 25% of all chronic insomniac patients. This is theorized to be a consequence of unbalanced awakening and sleep, which has been supported by research on the hypothalamic-pituitary-adrenal axis and autonomic nervous system. Long-standing insomnia has a prevalence of 10% among adult populace(3). Temporary insomnia may be due to stress or changes in schedule or atmosphere, which can last for a few days or weeks. Chronic (long-term) insomnia occurs 3 or more nights a week, lasts more than 3 months, and cannot be fully clarified by another medical condition. Insomnia can have impact on one's memory, concentration and focus. Chronic insomnia raises risk of many health problem like high blood pressure, diabetes, and chronic heart diseases(4).

As others insomnia has also not been uncommon in Pakistani medical undergraduates(5). Prevalence of sleep disturbance is reported among Pakistani medical students are mainly due to academic stress. They experience more affliction of having to manage with significant sums of course load, time limits, relentless assessments, anxiety about rankings, social pressure and highly competitive atmosphere of a medical college(6). It is a multifactorial disorder mostly caused by psychological stress(7) and has been negative linked with emotional intelligence, including the tendency to reveal empathy(8). Assuming emotional intelligence (EI) as an emblem of competency which embodies 12 abilities, including emotional self-awareness, self-control, achievement orientation, adaptability, empathy, positive outlook, organizational awareness, mentor, influence, conflict management, inspirational leadership, and team work. Presently, EI and empathy are more than ever essential components of the competencies required of physicians.(9).

Several studies have been conducted around the world, to statistically correlate sleep quality among medical under graduated. This study was organized to bridge the gap by accessing relation of insomnia with psychological stress and emotional quotient among medical students. We hypothesized that disturbed sleep and insomnia affects the levels of stress and EI.

Methodology

This was the descriptive cross-sectional type of study. It was conducted among the medical undergraduate students of Liaquat University of Medical and Health Science (LUMHS) Jamshoro, from 15th August 2022 to 31st October 2022 through a questionnaire designed to assess their quality of sleep, stress levels and emotional intelligence levels. The questionnaire was formulated with assistance from Regensburg's Insomnia Scale (12) to determine insomnia score for normal and insomniac students, questionnaire taken from Perceived Stress Scale to estimate the level of stress among them (13) and questionnaire of Managing Emotions from Emotional Intelligence questionnaire (14) to assess their emotional quotient (EQ). The data collected through the questionnaire was studied and analyzed, all variables were observed and correlated with each other to find out the associations among them.

The sample selection for this study was randomized from different departments of LUMHS through non-probability convenient sampling. The Sample size was calculated as 167 from the total student population of LUMHS.

The standard set for this study was to include only the students of LUMHS with age limit of 17 to 26 years and to exclude all other students from other universities and beyond mentioned age group.

RESULTS

A total of 167 students were included in this study out of which 84 (50.30%) were female and 83 (49.70%) were male. The mean age of students was 20.95±4.548 years. Out of 167 students, 96 (57.4%) were insomniac students while 71(42.5%) students had normal sleep. EI scores of students were measured and classified into 3 categories on the basis of Emotional intelligence questionnaire, i.e., low, moderate and high EI. generally Comparing insomnia with EI and stress, 77.08% insomniac

students had low EI, 18.75% had moderate EI and 4.16% had high EI, 16.66% perceived high stress, 63.54% were experiencing moderate stress, and 19.79% were having low stress. Correlating stress with EI, it was found that stress has a significant negative relation with EI (p=0.007), analysis further showed no significant correlation existed between stress and insomnia (p=0.056) but psychological insomnia was found to have significant negative correlation with EI p<0.001 (table 2).
Comparing the relation of insomnia with EI and stress quantitatively, ANOVA test was applied, it was analyzed that insomnia has a significant associations with EI p<0.01 but it had no significant association with stress (p=0.583), as it can be seen in table 3.

Table 1 Distribution of stress, EI and insomnia among participants

		Frequency	percent	Valid percent	Cumulative percent
Stress [1]	Low *	40	24.0	24.0	24.0
	Moderate **	105	62.9	62.9	86.8
	High ***	22	13.2	13.2	100.0
EI [2]	Low *	75	44.9	44.9	44.9
	Moderate **	65	38.9	38.9	83.8
	High ***	27	16.2	16.2	100.0
Insomnia [3]	Normal *	71	42.5	42.5	42.5
	insomniac **	96	57.5	57.5	100.0
Total		167	100	100	

[1]According to perceived stress scale low score is between 0-13[*] ,moderate is between 14-6[**],high is between 27-40[***]. Self-assessment questionnaire of EI [2], low EI component is between 10-17[*], moderate is between 18-34[**], high EI component has score between 35-50[***]. According to Regensburg insomnia scale[3] normal sleep score[*] is below 12 while score above it indicates psychological insomnia[**]

Table 2 Correlations analysis of sleep EI and Stress

		Sleep	EI	Stress
Sleep	Pearson Correlation	1	-.707**	.148
	Sig. (2-tailed)		.000	.056
	N	167	167	167
EI	Pearson Correlation	-.707**	1	-.208**
	Sig. (2-tailed)	.000		.007
	N	167	167	167
Stress	Pearson Correlation	.148	-.208**	1
	Sig. (2-tailed)	.056	.007	
	N	167	167	167

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 Analysis of variance comparing insomnia with EI and stress score

		Sum of Squares	Df	Mean Square	F	Sig.
EI	Between Groups	11865.505	30	395.517	14.378	.000
	Within Groups	3741.034	136	27.508		
	Total	15606.539	166			
Stress	Between Groups	1174.639	30	39.155	.925	.583
	Within Groups	5758.786	136	42.344		
	Total	6933.425	166			

Discussion

Sleep has an important impact on health; reduced sleep and insomnia greatly deteriorates normal functioning of body. The primary purpose of our study is to evaluate the relation of stress, sleep and EI among medical students. We found that prolong insomnia leads to reduced EI. According to our

results students who have low EI take more stress than normal. Moreover, we found no significant relation of stress with insomnia.

A study conducted in Pakistan to assess the prevalence of insomnia among medical and non-medical students that was found out to be 67.3 % and 50.4 % respectively (5), while in case of our study it was found to be 57.5% which is approximately same. A study conducted in Poland, found that 10% were having high stress and 19% of the students were insomniac (14) while in case of our study percentage of stress taking by students is 16.66% high perceived stress, 63.54% moderate stress and 19.79% and 57.5% of students were insomniac. Another study in Poland found that 36.8% of medical students were reported insomniac who were found taking more stress(15), In contrast to these studies, our study found that stress has no significant relation with short term insomnia.

Sleep deprivation produced statistically significant declines in several facets of perceived emotional Intelligence(7). A meta-analysis of 60 studies on the effect of sleep deprivation between physicians and non-physicians shows that sleeps deprivation reduces the overall performance, thus insomnia has negative effect on cognition(1). Insignificant sleep quality was greatly under reported in our study as 57.5% of medical undergraduates, who noticed that the quality of their sleep was fair enough, in fact turned out to be insomniac as predicted by RIS scores. This contradiction between factual scores and self-acumen denotes lack of education about sleep quality and insomnia. Students are perhaps not able to see the wider prospective to correlate their symptoms to insomnia. Insufficient sleep has detrimental effects learning, procurement, consolidation and reminiscence. Thus, it is vital to execute further research with the aim to recognize other aspects accountable for such disturbed sleep arrays, so that efficient plans can be made to target and settle them. Various preliminary measures should be taken which embrace sleep education among students, highlighting the significance of stress and time management, organizing schedules more student-friendly and accommodative; and initiating a healthy atmosphere in general where our forth coming professionals and specialists can prosper and embellish. Our analysis has also its restriction. RIS is a self-report inventory which is used as a data collecting tool in this study. Thus, the presence of recall bias and social desirability bias that cannot be ignored. Voluntary partaking of the subjects may result sampling bias. Thus, our findings generalized to only medical students and further studies should be carried to confirm the findings.

Conclusion

Disturbed sleep and high stress levels individually affects one's emotional intelligence, but short term insomnia is not found to have association with stress levels

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