To Study Association of Stress, Depression and Internet Addiction in Medical Students: A Cross Sectional Study

Mala Bharti[1], Akhil Menia[2], Rakesh Banal[3], Anil Kumar[4]*

[1]*Demonstrator, Department of Physiology, GMC Jammu*

[2]*Senior Resident, Department of Psychiatry, GMC, Jammu*

[3]*Assistant Professor, Department of Psychiatry, GMC, Jammu*

[4]*Assistant Professor, Department of Biochemistry, GMC Jammu*

*Corresponding Author:

Anil Kumar

Assistant Professor, Department of Biochemistry, GMC Jammu

Abstract

Stress can lead to physiological reaction and everyone feels it at some point in their lifetime and it is basically how we react when we feel threatened. Prolonged or unattended stress can lead to Depression, which is a very serious psychiatric disorder that negatively affects how a person feels, think and behave. Internet addiction is regarded as a kind of technological addiction. The present study was conducted in the Postgraduate Department of Physiology, Government Medical College, Jammu over a period of one year from November 2020 to October 2021 (191 sample size). Tools included - Internet Addiction Test **(IAT; Young, 1998),** HAM D for Depression and Perceived stress scale (PSS) for Stress. A significant correlation was seen between average duration spent on internet usage and internet addiction with a p value of 0.00. A positive correlation was seen between stress and depression with a p value of 0.000. Increased time spent on the Internet may cause serious effects and strained human relationship. Resolving Internet addiction can definitely help reduce its negative consequences and ensure proper, safe and productive use of technology.

Introduction

Stress is any change which can cause strain to the body. Stress results in various physical and mental symptoms which lead to a decline in health.[1] Stress management basically refers to the ones ability to cope mediate stress response, thus allowing stress to be controllable.[2] Body reacts to stress by releasing hormones which helps ones brain more alert and muscle more tense and helps body to adjust in new situations.

Prolonged or unattended stress can lead to Depression, which is a very serious psychiatric disorder that negatively affects how a person feels, think and behave. Depression is classified medically as mental and behaviour disorder.[3] It is often associated with loss of pleasurable feelings.[4] COVID 19 has resulted in increased incidence of depressive symptoms in younger population with reduction in over all wellbeing.[5] Internet addiction is defined as any online related compulsive behaviour which interferes with normal living and causes severe stress on family, friends, loved ones and one's work environment. It is a compulsive behaviour that completely dominates the users (addict) life.[6] Internet addiction is regarded as a kind of technological addiction and based on how we use, it can be good or bad thing for human beings.[7]

In 2006 a mass study was done by I-Cube, which enrolled 65,000 individuals. The age group which was showing highest frequency of internet addiction was young males. In a study in school going adolescents, authors have reported after interviewing 603 adolescents that the prevalence of internet addiction was noted to be 3.96% in boys and 1.62% of girls. Over 15% of the total sample showed overuse of internet but below internet addiction criteria. Stress scores were significantly correlated with the internet use patterns in both sexes.[8]

Our study was done to estimate any relationship between stress, Depression and internet addiction in medical students which to our knowledge had not been done in our region.

MATERIAL AND METHODS –

The present study was conducted in the Postgraduate Department of Physiology, Government Medical College, Jammu over a period of one year from November 2020 to October 2021.The study was approved by Institutional Ethical Committee of GMC Jammu.

The study was conducted on 191 medical students, belonging to either sex and from all Profs of MBBS who were randomly enrolled in the study from Government Medical College, Jammu. A written informed consent was taken from all eligible subjects.

Healthy male and female students of GMC, Jammu who had given consent for participation in the study.

Such students were excluded from the study, who Were on Psychotropics, Suffered from Psychiatric illness, had history of any chronic disease who did not give consent for the study.

Assessment of Internet Addiction - Internet addiction was assessed by using the Internet Addiction Test **(IAT; Young, 1998)** which is a 20-item scale that measures the presence and severity of internet dependency among adults.

Assessment of depression - Assessment of Depression was done by HAM D scale. It is a 21 item but scoring is based on first 17 items.

Assessment of stress - Assessment of stress was done by Perceived stress scale (PSS). It is a 10 item scale and score ranges from 0 to 40.

RESULTS -

Correlations

Table 1 – Correlation between average duration spent on internet usage in hours and Internet Addiction Test.

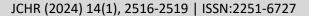|		AVERAGE DURATION in hours	INTERNET ADDICTION TEST
AVERAGE DURATION in hours	Pearson Correlation	1	.881**
	Sig. (2-tailed)		.000
	N	191	191
INTERNET ADDICTION TEST	Pearson Correlation	.881**	1
	Sig. (2-tailed)	.000	
	N	191	191

Table 2 – Correlation between Internet Addiction Test and Perceived Stress Scale

		INTERNET ADDICTION TEST	PERCEIVED STRESS SCALE
INTERNET ADDICTION TEST	Pearson Correlation	1	.106
	Sig. (2-tailed)		.147
	N	191	190
PERCIEVED STRESS SCALE	Pearson Correlation	.106	1
	Sig. (2-tailed)	.147	
	N	190	190

Table 3 – Correlation between Internet Addiction Test and HAM D

		INTERNET ADDICTION TEST	HAM D
INTERNET ADDICTION TEST	Pearson Correlation	1	.133
	Sig. (2-tailed)		.066
	N	191	191

HAM D	Pearson Correlation	.133	1
	Sig. (2-tailed)	.066	
	N	191	191

Table 4 – Correlation between HAM D and Perceived Stress Scale

		HAM D	PERCEIVED STRESS SCALE
HAM D	Pearson Correlation	1	.259**
	Sig. (2-tailed)		.000
	N	191	190
PERCIEVED STRESS SCALE	Pearson Correlation	.259**	1
	Sig. (2-tailed)	.000	
	N	190	190

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

Total 191 candidates participated in the study with mean age of 20.016. Study includes 93 males and 98 females. Maximum number of internet usage was in the evening (32.5%) and minimum usage was in afternoon (2.1%) with maximum usage of 12 hours/day and minimum of 5 hours/day with mean of 2.970. maximum expenditure on internet usage in rupees was 1000 and minimum 100 with mean of 307.853. maximum internet use was seen at Hostel (79.1%) and minimum usage was seen at cyber cafe (2.1%). On PSS, 25 participants showed symptoms of low stress, 155 showed symptoms of moderate stress and 10 showed symptoms of severe stress. One participant was missing/not recorded. On Ham-D, 105 participants presented with no depressive symptoms. 73 participants presented with mild depression, 8 presented with moderate depression and 5 presented with severe depression. On IAT, normal usage was seen in 123 participants, mild internet addiction was seen in 50 participants, moderate internet addiction was seen in 15 and 3 presented with severe internet addiction.

No significant association was seen between internet addiction and stress with a p value of 0.147 and there was also no association seen between depression and internet addiction with a p value of 0.066. There was no significant association seen between age and internet addiction/stress with a p value of 0.131 and 0.809 indicating age of participants is not related to internet addiction and stress.

A correlation was seen between average duration spent on internet usage and internet addiction with a p value of 0.00 indicating increase in internet usage leads to internet addiction. A positive correlation was seen

between stress and depression with a p value of 0.000 indicating students showing more stress symptoms are more prone to depression.

Discussion –

Internet use is one of the most important realities of our modern world as it helps us a lot in our day today life. A major internet user comprises of young age group students (school and college), because of increasing demand to be in touch with knowledge, however with increased time spent on internet, students usually shifts from safe and productive use of technology to unsafe and unproductive use. One of the key finding of our study was that maximum internet usage was of 12 hours/day and minimum usage was of 5 hours/day (mean of 2.970) and a statistically significant correlation was found between average hours spent on internet use with internet addiction with a p value of .000. Study shows that only 3% of students spent more than 8 hours of their time online.[9] One of the main reasons for increase in average time spent on the Internet can be attributed to Covid-19 pandemic, as method of teaching and have been replaced to online than offline. As students were confined to their homes, they would definitely have definitely spent more time browsing the Internet, including either homework or research or other unproductive online activities like social media.

Digital technology is one of the best ways to access information but it is not considered a very good method for educational purposes. Increased use of internet impacts psychological health of college student, which includes an inability to control the average amount of

time spent on Internet, possible withdrawal symptoms (physical, behavioural and psychological) when their average time spent on internet usage is decreased, poor social life and ultimately poor academic performance.

In our study 190 students presented with symptoms of stress on PSS, which includes 10 students with symptoms of severe stress and 86 students presented with symptoms of depression, which includes 10 students with symptoms of severe depression. Medical students are involved in a variety of cognitively challenging activities along with excessive Internet usage since teaching is often done by online medium with exhausting working hours (including unproductive internet usage) leading to burnout and a prolonged period of stress.[10]

In our study correlation between stress and Depression was statistically significant with a p value of .000, signifying that students showing symptoms of stress are more prone to depression. It is well known fact that stress may lead to depression. Depression is often preceded by stressors, or stressful situations and preceding depression stressors are much more frequent than in the general population.[11] Stressful life events and the origin and development of depression are widely investigated, providing increasing evidence supporting this association.[12,13,14]

Conclusion -

Internet usage in college students has been found to have a very strong associated with depression, and often affects their social life leading to decreased academic performance and strained family relationship. Increased time spent on the Internet may cause serious effects and strained human relationship. There is an urgent need to decrease time spent on the Internet by strengthening social relationships with family and friends. Higher education institution demanding higher cognitive skills needs to device a strict strategy for appropriate use of internet/technology among students. Resolving Internet addiction can definitely help reduce its negative consequences and ensure proper, safe and productive use of technology.

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