CORRELATION BETWEEN PSYCHOLOGICAL PARAMETERS SUCH AS DEPRESSION, ANXIETY, AND STRESS AND AFFECT SCORE AMONG MEDICAL STUDENTS

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ABSTRACT

Objectives: In the modern era, internet use has turned out to be a significant arena for day-to-day life activities. Proper use of the internet is harmless, but misuse of this tool might lead to disruptions in psychological health and social relationships, yet available reports about the association between internet use and affect are inconsistent. Hence, the objective is to assess and correlate the psychological parameters with the affect score among medical college students using the depression anxiety stress scale (DASS)-21 questionnaire and positive and negative affect schedule (PANAS) scale.

Methods: The present study was a cross-sectional study conducted on medical students in the age group of 17–22 years. 150 participants were recruited by random sampling. DASS-21 scale was used to assess depression, anxiety, and stress, consisting of 21 items designed to measure emotional states of depression, anxiety, and stress. PANAS is designed to assess individuals' positive and negative moods.

Results: Pearson's correlation of these psychological parameters with affect scores had a significant negative correlation with the positive affect score (depression [p=0.003], anxiety [p=0.01], and stress [p<0.04]) and a significant positive correlation with negative affect score (depression [p<0.02], anxiety [p=0.0009], and stress [p=0.01]). Students should be closely monitored with regard to their use of the internet, and also, internet addiction and psychological behaviors can be reduced by providing early counseling and interventional therapy.

Conclusion: Awareness about the harmful effects of excessive internet use should be provided so as to enhance the academic performance of students.

Keywords: Affect score, Stress, Depression, Anxiety, Medical students.

INTRODUCTION

The Internet has become an unavoidable tool in day-to-day life. The internet is one of the greatest influential media in the recent period. Its development has given lots of chance for the exchange of information, communication, and social interactions [1]. Research on internet addiction showed that increased internet use is associated with some psychological and social variables such as loneliness, decreased social circle, depression, and deprived mental health [2]. It had been noticed in the literature that excessive use of the internet results in mental and psychological disorders such as stress, depression, and anxiety [3]. Affect is associated with concepts relevant to substance use, which includes the positive and negative affect (NA), regulation of cognition, and behavioral motivation [4]. Positive affect is described as the extent to which an individual feels alert, active, and excited. High levels of positive affect show a state of energy, full attention, and pleasurable engagement and low positive affect levels indicate sadness and lethargy, whereas NA is defined as subjective distress, including mood fluctuations such as anger, fear, guilt, and disgust. High levels of NA indicate significant distress, whereas low levels of NA show a state of calmness [5,6].

In the modern era, internet use has turned out to be a significant arena for day-to-day life activities. Proper use of the internet is harmless, but misuse of this tool might lead to disruptions in psychological health and social relationships, yet available reports about the association between internet use and affect are inconsistent [4]. Hence, recently, many research works that are focused on the adverse effects of internet use and its addiction by adolescents and young people have emerged [1]. However, studies that are correlating affect score effects and psychological parameters such as depression, anxiety, and stress are not well documented so far. Hence, the present study is aimed to correlate certain psychological parameters with affect score effects.

Objectives
The objectives of the study are to assess and correlate the psychological parameters with the affect score among medical college students using the depression anxiety stress scale (DASS-21) questionnaire and positive and NA schedule (PANAS) scale.

METHODS

The study commenced after obtaining approval from the Institutional Ethics Committee. The present study was a cross-sectional study conducted among 1st-year and 2nd-year medical students with the age group of 17–22 years, who were volunteered and ready to give written informed consent. 150 participants were recruited by random sampling. After receiving the informed consent, information on identity and medical and family history was collected from all participants. Furthermore, the students were asked to fill the questionnaires and the descriptions of which are given below.

DASS-21 scale was used to assess depression, anxiety, and stress, consisting of 21 items designed to measure emotional states of depression, anxiety, and stress. The final score was calculated by multiplying the score of each question with 2. Based on the average scores obtained, it is considered as mild, moderate, and severe type of depression, anxiety, and stress.

PANAS is designed to assess individuals' positive and negative moods, consisting of 20 words. This questionnaire explains different emotions

Table 1: Basic characteristics of the study population (n=150)

Parameter	Mean	SD
Age (years)	19.18	1.14
BMI (kg/m^2)	24.55	3.63
WC (cm)	93.51	9.89
SBP (mmHg)	115.65	7.13
DBP (mmHg)	77.38	6.73
Years of Internet use	5.58	2.95
Hours of Internet use per day	8.27	4.25

SD: Standard deviation, BMI: Body mass index, WC: Waist circumference, SBP: Systolic blood pressure, DBP: Diastolic blood pressure

Table 2: Mean and SD of psychological parameters such as depression, anxiety, stress: n=150

Parameter	Mean	SD
Depression	14.77	7.34
Anxiety	13.25	6.50
Stress	15.44	6.83

SD: Standard deviation

Table 3: Correlation of affect score with depression, anxiety, and stress

Parameter	Positive affect score	Negative affect score
Depression		
r	−0.23	0.18
p	0.003*	0.02*
Anxiety		
r	−0.20	0.26
p	0.01*	0.0009*
Stress		
r	−0.16	0.20
p	0.04*	0.01*

*Statistically significant

and feelings. Each question has a grade from 0 to 5. Finally, scores will be added up separately for positive and NA. Total score can range from 10 to 50 for both positive and NA. The highest score of each affect indicates higher degree of that affect [7].

Statistical analysis

Statistical analyses were performed using SAS 9.2 version software. Values were expressed as mean and standard deviation for the continuous variables. Correlations between the variables were investigated by Pearson's correlation coefficient. Statistical significance was considered if the $p<0.05$.

RESULTS

Basic characteristics of the study population are noted in Table 1. The mean age of the participants was 19.18 (±1.14) years. Baseline parameters such as body mass index (BMI) was 24.55 (±3.63) kg/m^2, average waist circumference was 93.51 (±9.89) cm, and mean systolic and diastolic blood pressure (BP) were found to be 115.65 (±7.13) and 77.38 (±6.73) mmHg. The mean duration of internet used by the participants was 5.58 (±2.95) years and the average number of hours of internet use per day was 8.27 (±4.25) h.

Psychological parameters such as depression, anxiety, and stress were correlated with the affect scores. The result showed that the mean value of depression, anxiety, and stress was found to be 14.77, 13.25,

and 15.44, respectively (Table 2) and the Pearson's correlation of these psychological parameters with affect scores (Table 3) had significant negative correlation with the positive affect score (depression [r=−0.23, p=0.003], anxiety [r=−0.20, p=0.01], and stress [r=0.16, p<0.04]) and significant positive correlation with NA score (depression [r=0.18, p<0.02], anxiety [r=0.26, p=0.0009], and stress [r=0.20, p=0.01]).

DISCUSSION

The present study was designed to understand the implication of modern-day (over) usage of the internet in causing health hazards among teenagers. In this study, volunteers from the medical students were recruited and with them recorded the basic parameters such as age, BMI, waist circumference, and systolic and diastolic BP. Further, details regarding years of use of the internet and the average time spent on the internet per day were collected (Table 1). Furthermore, asked them to perform DASS questionnaire, their scores for internet addiction, two domains of mood like positive and NA were calculated (Tables 2 and 3).

To reiterate the adverse effect of internet addiction in the present study, psychological parameters such as depression, anxiety, and stress were correlated with the affect scores (Table 3). Accordingly, all these psychological parameters showed a significant negative correlation with positive affect score and positive correlation with NA score. Watson *et al.* (1988) also reported the positive correlation between depression and anxiety with NA. They further said that NA stands as a predictor of psychiatric disorder and recommended that strengthening of positive affect in an individual with psychiatric symptoms will enhance their discriminative power. The result of this study also supports the above observation and includes one more psychiatric parameter, the stress apart from the depression and anxiety mentioned in the above paper.

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CONFLICT OF INTEREST

Authors declare no conflict of interest.

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