



3-2023

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Recommended Citation

Zehra, Syeda Aqeela; Khan, Javeria; Rafiq, Marium; Ansari, Kinza; Iqbal, Shabina; Nafees, Faizan Nafees; and Zaidi, Syed Tafazzul Hyder Zaidi (2023) "Assessment of Social Media Addiction and Its Link to Psychological Distress: A Comparative Study On Undergraduate Students," *Pakistan Journal of Neurological Sciences (PJNS)*: Vol. 18: Iss. 1, Article 7.

Available at: <https://ecommons.aku.edu/pjns/vol18/iss1/7>

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ASSESSMENT OF SOCIAL MEDIA ADDICTION AND ITS LINK TO PSYCHOLOGICAL DISTRESS: A COMPARATIVE STUDY ON UNDERGRADUATE STUDENTS

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Date of submission: December 9, 2022 **Date of revision:** March 19, 2023 **Date of acceptance:** March 25, 2023

ABSTRACT

Background and objective:

Addiction to social networking sites (SNSs) is their unhealthy use that interferes with daily functionality and results in unwanted outcomes. This study investigates the prevalence and intensity as well as the impact of SNSs addiction on the daily routine among young undergraduate students. In addition, it evaluates the relationship between psychological suffering and SNSs addiction.

Methods:

A cross sectional study was conducted among undergraduate students of Karachi, Pakistan from January to June 2022. Data was collected using non-probability convenience sampling technique. A self-administered questionnaire was used, compiled from two validated questionnaires, Young's internet addiction (YIA) test and Depression-Anxiety-Stress scale (DASS 21). The SPSS software version 25.0 was used to analyze the collected data. In the 95% confidence interval, statistical analysis was set at a p-value of 0.05 as the threshold for statistical significance.

Results:

Total 40.7% undergraduate students were found to have no internet addiction, followed by 34.3% mildly, 21.0% moderately and only 4% students severely addicted. Around 28% young undergraduate students were suffering from extremely severe depression (DASS score 28+) followed by 24.0% with moderate (DASS score 14-20), 14.0 % with severe (DASS score 21-27) and 13.7 % with mild depression (DASS score 10-13), while 20.3 % were found not depressed (DASS score 0-9). Mean age of 21 years was found to be consistent for having internet addiction and depression both. Cross study of internet addiction shows highly suggestive behavior with depression ($p < 0.01$).

Conclusion:

Social networking sites addiction is found to be a major contributing factor for depression in young undergraduate students. Out of all the aspects of life, education is found to be the most severely affected domain of life among students with SNS addiction.

Keywords: Social media addiction, Internet addiction disorder, Psychological distress.

INTRODUCTION

Social networking sites (SNS) have been observed as a "Global consumer phenomenon".¹ As of January 2020, 4.54 billion people i.e. roughly 59% of the world's population, were reported to be regular internet users.²

It is reported that 13.62% of young students are facing

SNS addiction.³ Out of all the social media websites, the top most used in a descending manner are WhatsApp, Facebook, Instagram and Snapchat.⁴ Internet addiction can be defined as: "Unhealthy use of social media platforms that interferes with daily functionality and results in unwanted outcomes".⁵

Number of studies found that SNS addiction is more prevalent in male gender, unmarried, unemployed and undergraduate students.⁶⁻⁸

When we talk about psychological distress, it is an umbrella term used for a spectrum of symptoms including depression (such as hopelessness, loss of interest, sad mood), anxiety (feeling of restlessness, tension, overthinking etc).⁹ Multiple studies found a strong association of SNS addiction with abnormal psychological behavior, as most of the internet addicts as compared to non-addicts have imbalanced and deranged mental status, are depressed and have poor family relations which further lead to increased proportion of suicide attempts in aforementioned subjects.^{6,10} The most common causes of internet addiction are proposed as unscheduled time, lack of parental check, unbound and unlimited access to internet and escape from social involvement.¹¹

Counting on Asia's top ten countries with most frequent internet usage, Pakistan is ranked 8th with 76 million users of internet.^{12, 13} A well-known internet service provider company in Pakistan in one of their study stated that there are 25 million internet users in the country and among them, 66.3% are students.¹⁴

The prevalence of SNS addiction has not yet been defined in undergraduate students of different pursuits in our population. The data that we have documented aids in the statistical approach towards this issue, rather than literature focus only. Moreover, this study was done with the goal of discovering whether SNS addiction has a statistically significant or insignificant impact on the lives of high school and university going students of Karachi with respect to psychological distress.

The objectives of the study were:

- To document the incidence of SNS overuse among undergraduate students.
- To determine influence of SNS addiction on the students' quality of life.
- To find the relation between SNS addiction and psychological distress.

METHODS

Study design: Cross-sectional survey.

Place and duration of study: Undergraduate students from few of Pakistan's largest public sector universities including Jinnah Sindh Medical University, NED

University of Engineering and Technology, and University of Karachi, were the subject of this study. This study was conducted from January to June, 2022.

Sample size: Using the sample size formula in Open Source Epidemiologic Statistics for Public Health software, the sample size was determined to be 304: $n = [DEFF * Np(1-p)] / [(d^2/Z^2(1-\alpha/2 * (N-1) + p * (1-p))]$, where the population size (for finite population correction factor or fpc) is 48800 and the population's estimated percentage frequency of the outcome factor is 27.4%. (Masthi, et al. Indian association of preventive and social medicine, 43(3):180 (2018), confidence limits as % of 100(absolute +/- %) (d): 5%, design effect (for cluster surveys-DEFF): 1, confidence level (c): 95%.

Sampling technique: Non-probability consecutive sampling.

Inclusion criteria: The study comprised undergraduate students from the aforementioned three institutions who were familiar with social networking sites, used them, and fell within the age group of 19-25 years old.

Exclusion criteria: Students with any coexisting and diagnosed psychiatric illness and the ones with limited or no access to the internet were excluded from this study.

Data collection: Data was collected by rotating online survey questionnaires after taking consent from volunteering undergraduate participants. In order to standardize the questionnaire, a small scale preliminary study known as pilot study was done amongst participants.

A self-administered questionnaire was used, compiled from two validated questionnaires, Young's internet addiction (YIA) test and depression-anxiety-stress scale (DASS 21) as scales of guideline for data collection after approval from Institutional Review Board. Pilot study was done before the main data collection.

Diagnosis of internet addiction was based on Young's internet addiction test (IAT).¹⁵ The overall Cronbach's alpha for Young's IAT computed from our pilot study was 0.918. The sum of the participant's evaluations for each of the 20 item responses makes up the IAT total score. Each item is scored from 0 to 5 on a 5-point scale. The maximum score is 100 points, the higher the score, the higher level of severity of Internet compulsivity and addiction would be. Total scores

between 0 and 30 points are said to represent regular Internet usage; scores of 31 to 49 indicate the presence of a mild level of Internet addiction; scores between 50 to 79 show a moderate level, and scores of 80 to 100 indicate a severe dependence upon the Internet.

The depression, anxiety and stress scale - 21 Items (DASS-21), a collection of three self-report scales developed to measure the emotional states of depression, anxiety, and stress, was used to assess the psychological distress.¹⁶ The overall Cronbach's alpha for the DASS-21 computed from our pilot study, was 0.936, whereas DASS-21 subscales had Cronbach's alpha values of 0.831, 0.738, 0.876 for depression (DASS-D), anxiety (DASS-A) and stress (DASS-S) respectively.

All ethical measures were observed and followed for data collection and documentation of the collected data.

Data analysis: The SPSS software version 25.0 was used to analyze the collected data. For the categorical variables, frequency and percentages were used to express them, while descriptive statistics were generated for the mean and standard deviation. Any correlation between internet addiction and psychological suffering was determined using Pearson's correlation coefficient. Chi square was applied to evaluate the impact of SNSs addiction on the daily life activities of students. Cross tabulations were designed for suitable corresponding variables for their

percentages. In the 95% confidence interval, statistical analysis was set at a p-value of 0.05 as the threshold for statistical significance.

RESULTS:

Internet addiction and associated depression:

On the basis of above mentioned methodology our study found out that as far as the incidence of social networking sites usage is concerned, out of 300 students, 122 students (40.7%) were found to have no internet addiction according to Young's internet addiction assessment score, 103 students (34.3%) were mildly addicted, 63 students (21.0%) were moderately addicted and only 12 students (4%) were found to be severely addicted.

While the outcome of the influence of SNSs upon the quality of life and its psychological impact among the students appears to be as follows, out of 300 students, 61 students (20.3 %) did not experience depression (DASS score 0-9), 41 students (13.7%) had mild depression (DASS score 10-13), 72 students (24.0%) had moderate depression (DASS score 14-20), 42 students (14.0 %) had severe depression (DASS score 21-27) and 84 students (28.0 %) were found to have extremely severe depression (DASS score 28+).

(Table 1)

The cross tabulation of internet addiction and depression showed a statistically significant dependence with the p-value less than 0.01 and chi-square value of 57.64 with likelihood ratio of 60.032.

Table 1: Relationship between internet addiction, depression, anxiety, and stress scale (DASS total score).

		DASS total score					Total
		0-9	10-13	14-20	21-27	28+	
Internet Addiction	N= 0-30	45	20	30	10	17	122
	m= 31-49	10	9	27	17	40	103
	M= 50-79	5	10	13	15	20	63
	S=80-100	1	2	2	0	7	12
Total		61	41	72	42	84	300

N= no addiction, m= mild addiction, M= moderate addiction, S= severe addiction.

Most visited sites, average hours online, affected aspect of life:

Among the students of each institute we found that the social networking sites are the most used sites over the internet by these students (Figure 1). We also found that SNSs are the most used sites by medical students as compared to non-medical students. We further found in the study that the education followed by family are the most affected aspects of life in the students addicted to the internet (Figure 2). Here again, the medical students had a higher effect on their education as compared to non-medical students. Moreover, the average time online reported by participants was six hours.

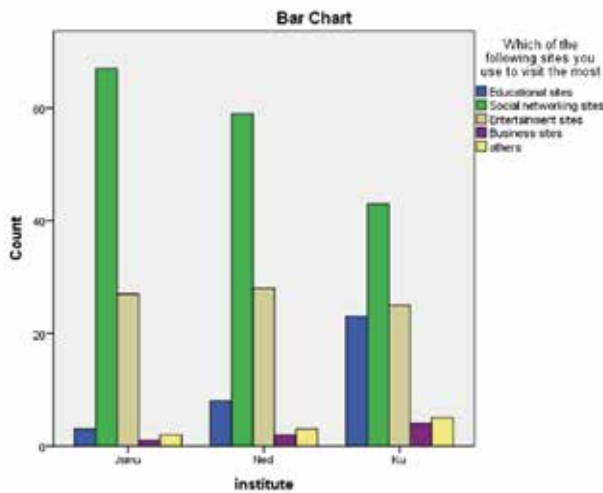


Figure 1: Frequency of most commonly used internet sites

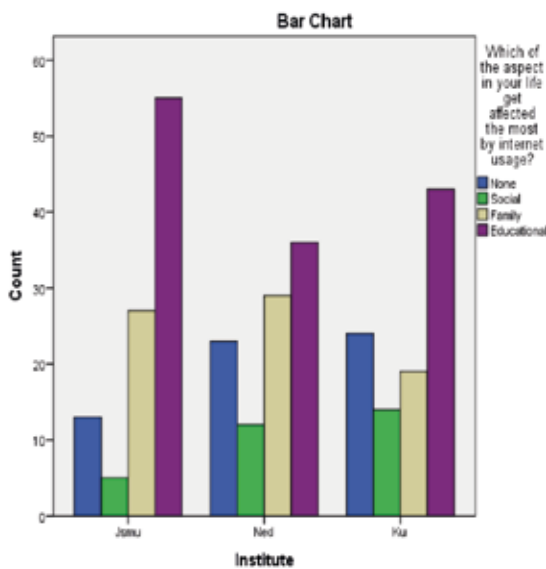


Figure 2: Frequency of most affected aspect of life due to internet addiction.

Average age:

Our study comprises of 300 samples, had a mean age of 21 years which was also found to be consistent with the mean age for having internet addiction and psychological distress. (Table 2)

Table 2: Age and depression, anxiety, and stress scale (DASS total score) correlation.

	DASS Total Score					Total
	0-9	10-13	14-20	21-27	28+	
Age 19	7	3	14	6	13	43
Age 20	8	8	13	8	18	55
Age 21	16	12	18	15	20	81
Age 22	13	11	17	6	22	69
Age 23	11	3	4	4	7	29
Age 24	5	2	3	3	2	15
Age 25	1	2	3	0	2	8
Total	61	41	72	42	84	300

DISCUSSION

This study sought to investigate the relation between compulsive internet usage and psychological distress. It is positively found out that many undergraduate students who have internet addiction also experience depressive symptoms, especially the medical students in whom social media addiction came out to be 67% which was supported by another previous study on medical students.¹⁷ In our study 4% of participants had a major SNS addiction which is comparable to the findings of studies by Abdel et al. (1.9%) and Morahan et al. (8.1%).^{18, 19} In our study, educational aspect of life remained the highly affected feature of life in medical, engineering and general sciences students which was previously been reported in another study.^{20, 21} Similarly one of the study conducted by Oumaima Alaika et al. in 2020 among Moroccan university students represented a negative impact of SNS addiction on their job, relationship or studies, health and well-being.²²

According to a recent study, the peak age for SNS addiction is twenty years old. This was also found true in a study investigated by Aznar et al. in 2020.²³ Moreover, a trend in our study also highlighted that majority of students with no internet addiction have developed no depression but on the other hand, majority of the internet addicts, independent of severity of addiction, have been found to be severely depressed which was also reported by multiple studies.^{24, 25} Whereas, in another study the severity of this addiction

was extremely low i.e. 0.3% that could be due to differences in methodology.²⁶ We found in our study that depression, anxiety and stress anticipated positively for internet addiction which was also predicted positively in a study conducted in 2018 by Yucen et al.²⁷

Limitations:

There were limitations of our study that were indispensable. It was a cross-sectional study of confined sample size with completely self-administered data so there was a likelihood that the answers of students may have been affected by what they think was socially acceptable, rather than revealing what might have been the truth i.e. social desirability bias. In

addition, a comparable research should be conducted with bigger samples from distinct universities up to the extent so that results can be generalized to the whole population.

CONCLUSION

Social networking sites addiction is found to be a major contributing factor for depression in young undergraduate students. Out of all the aspects of life, education is found to be the most severely affected domain of life among students with SNS addiction. The data suggests the necessity of the assessment of depression in the treatment of internet-addicted students.

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Conflict of interest: Author declares no conflict of interest.

Funding disclosure: Nil

Authors' contribution:

Syeda Aqeela Zehra; Concept, data analysis, manuscript writing, manuscript revision

Javeria Khan; Concept, data collection, data analysis, manuscript writing,

Marium Rafiq; Data collection, manuscript writing, manuscript revision

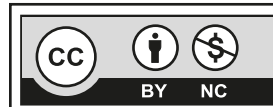
Kinza Ansari; Data collection, data analysis, manuscript writing

Shabina Iqbal; Data collection, data analysis, manuscript writing

Faizan Nafees; Data collection, data analysis, manuscript writing

Syed Tafazzul Hyder Zaidi; Concept and design, manuscript revision

All the authors have approved the final version of the article, and agree to be accountable for all aspects of the work.



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