Mental health problems, perceived stress, and internet addiction among undergraduate college students of Kathmandu, Nepal

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Abstract

Introduction:

The global burden of disease due to mental health problems is on a rise. One of the vulnerable groups are college going youths. The objective of the current study was to examine the frequency and pattern of mental health problems, perceived stress, and internet addiction and explore their relationship with each other among students reporting voluntarily during stress management program.

Material and method:

A cross-sectional study among 139 undergraduate students was conducted as a part of a program titled "Stress, drugs and internet among college students" during orientation program for undergraduate students of a management college in Kathmandu Valley. Mental Health Screening Questionnaire (MHS), Young's Internet addiction test (YIAT), perceived stress scale (PSS) were used for mental health problems, internet addiction and stress respectively.

Results:

As per mental health screening questionnaire, 64.7% (90/139) and 7.2% (10/139) participants reported somewhat difficulty and very much or extreme difficulty. There was mild internet addiction among 45.3% and moderate internet addiction among 18.7%. There was significant positive correlation of the MHS score (indicative of number of mental health problems) with the total YIAT score (ρ= 0.404, p< 0.01) and PSS scores (ρ= 0.301, p< 0.01). Also, severity of internet addiction and perceived stress levels were positively associated with each other (ρ= 0.303, p< 0.01).

Conclusion:

There is significant burden of mental health problems, stress and problematic internet use among the undergraduate students in Nepal. There is also a significant positive correlation of the MHS score (indicative of number of mental health problems) with the Young's internet addiction test score and perceived stress scale scores.

Keywords:

Mental health screening questionnaire, Internet addiction, Stress, College students, Nepal

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INTRODUCTION

Globally, mental health problems contribute to a large proportion of the disease burden. It is estimated that around 16% of global disability-adjusted life years (DALYs) were attributable to mental disorders and the economic burden associated with this was about five trillion USD in 2019.[1] It has been found that about half of all lifetime mental health problems start during adolescence and might affect the entire productive years of life if left untreated.[2] Therefore, it is crucial to identify and treat those vulnerable youths at the earliest possible. Adolescents and young adults spend a significant amount of their time in academic institutions which might take a significant toll on their mental health. Many college students suffer from mental health problems due to academic pressure, family expectations, adverse school or college environment, bullying and harsh punishment. Reviews show that mental health problems such as anxiety, depression and substance abuse are prevalent and common among students.[3] In a study done in Nepal among the students aged 15-21 years, more than 50% had varying severity of anxiety symptoms and about 40% had symptoms of depression.[4] Another study showed that about 50% of the medical students have some form of mental health problems.[5]

Problematic use of internet or internet addiction among students is public health concern. In Nepal, about 91% of the population has access to internet leading to more cases of internet addiction disorders especially among the adolescents and young adults. A study done among 166 undergraduate students showed 31.9% had problematic internet use.[6] Studies done in Nepal have reported that the problematic use of internet is associated with stress, sleep issues and mental health conditions like depression and anxiety and many other mental health outcomes.[7, 8] There are few studies in Nepalese context that have explored the pattern of mental health problems, perceived stress and internet addiction among college students. The present study aimed to examine the frequency and pattern of mental health problems, perceived stress, and internet addiction among students voluntary reporting during stress management program. Further, relationship between internet addiction, perceived stress, and mental health problems were also explored.

Material and Methods

This study is a part of a program titled "Stress, drugs and internet among college students" that was conducted during orientation program for undergraduate students of a management college in the Kathmandu Valley. The overall goal of the program was to provide students a basic idea regarding mental health, stress, drug use and problematic internet use. The role of stress management techniques and the need of early identification and intervention for mental health problems were also highlighted. After the conclusion of orientation cum awareness session of about two hours' duration; assessment regarding common mental health problems, perceived stress and internet addiction was carried out using self-report based validated tools. The permission for the study was taken from the college authorities. The information sheet related to the study were distributed to all participants and written informed consent was taken prior to recruitment in this study. The participants had the right to withdraw their consent at any point of time during the study. They were assured that their identities would remain confidential, and no identifiable or contact information were collected.The students were also encouraged to seek professional help if they felt they had some mental health related problems. The Declaration of Helsinki was followed throughout the study.

The following assessment tools were used:

i. *Perceived Stress Scale(PSS):* It is one of the most widely used psychological instruments for measuring the participants' perception of mental stress.[9] It is a measure of the degree to which situations in one's life are appraised as stressful. The questions in the PSS ask about feelings and thoughts during the last month. It is easy to use with well-established and acceptable psychometric properties.[10]

ii. *Young's Internet Addiction Test:* The Young's Internet Addiction Test (YIAT) is one of the most widely used study instruments to assess internet addiction, and consists of 20 self-reported items. It assesses for the presence of addiction to the internet, electronic entertainment, social media, and general use of electronic devices[11, 12]. A score of 0 to 30 points are considered to reflect a normal level of Internet usage; scores of 31 to 49 indicate the presence of a mild level of Internet addiction; 50 to 79 reflect the presence of a moderate level; and scores of 80 to 100 indicate a severe dependence upon the Internet.[13]

iii. *Mental Health Screening Questionnaire:* It is an instrument used to assess psychological distress. It has 15 items similar to the PHQ-9 and additional questions that are rated as: 1= Yes; 0 =No. The 16th question asked the respondents about difficulty levels experienced by them due to above reported symptoms, and could be rated as "not difficult at all", "somewhat difficult", "very difficult" and "extremely difficult". Higher scores indicate greater psychological distress or poorer mental health. The response to question number 16 was used as final screening. If a participant responded as 'very difficult or extremely difficult' to this question, they were advised to seek help from a mental health expert considering him/her to be screen positive.[14]

Statistical analysis

The data were analysed using the SPSS version 16.0 (IBM Corp, Armonk, NY). Descriptive statistics was used to tabulate the socio-demographic and clinical profile of study participants. Spearman correlation analyses were conducted to assess the association between internet addiction, perceived stress, and mental health problems. A two-tailed p-value of less than 0.05 was considered significant.

Results

The males outnumbered the females in study sample, with 78 out of 139 participants belonging to male gender (56.1%). The average age of study sample was 19.05 years [Standard Deviation (SD): 1.50]. The relevant socio-demo-

graphic and clinical characteristics of study participants is summarized in Table 1.

The distribution of various self-reported mental health problems in study participants is described in Table 2. Further, as per the self-reported distress and/or dysfunction severity associated with one or more fifteen different mental health problems screened; about 28.1% (39/139), 64.7% (90/139), and 7.2% (10/139) of participants reported no difficulty, somewhat difficulty, and very much or extreme difficulty respectively. Accordingly, about 71.9% were likely to benefit from psychiatry consultation.

As per YIAT scores, the distribution of problematic internet use in study population was: normal level of internet use (36.0%, n=50), mild internet addiction (45.3%, n=63), moderate internet addiction (18.7%, n=26), and severe internet addiction (zero). As per PSS scores, about 6.5% (9/139), 85.6% (119/139), and 7.9% (11/139) of participants reported low, moderate, and high perceived stress levels respectively.

The results of correlation analyses between internet addiction, perceived stress, and mental health problems is described in Table 3. There was significant positive correlation of the MHS score (indicative of number of mental health problems) with the total YIAT score (ρ= 0.404, p< 0.01) and PSS scores (ρ= 0.301, p< 0.01) among study participants. Also, severity of internet addiction (YIAT score) and perceived stress levels (PSS score) were positively associated with each other (ρ= 0.303, p< 0.01).

Table 1: Descriptive profile of study participants (N=139)

Study variable	Mean ± SD/ Median (IQR) or Frequency (percentage)
Age (In years)	19.05 ± 1.50/ 19.00 (18.00-20.00)
Gender: Male Female	 78 (56.1%) 61 (43.9%)
Religion: Hindu Buddhism Others	 111 (79.9%) 20 (14.4%) 8 (5.7%)
YIAT score MHS score PSS score	36.48 ± 15.06/ 37.00 (26.00-46.00) 6.42 ± 2.95/ 6.00 (4.00-8.00) 19.94 ± 4.68/ 20.00 (17.00-22.00)

SD: Standard Deviation; IQR: Inter-quartile range; YIAT: Young's Internet Addiction Test; MHS: Mental Health Screening; PSS: Perceived Stress Scale.

Table 2: Distribution of mental health problems in study participants (N=139)

Mental health screening item (MHS)	Frequency (Percentage)#
MHS1: Anhedonia	125 (88.9%)
MHS2: Depressed mood	62 (44.6%)
MHS3: Sleep disturbances	67 (48.2%)
MHS4: Low energy	89 (64.0%)
MHS5: Eating disturbances	40 (31.7%)
MHS6: Ideas of guilt or hopelessness	44 (31.7%)
MHS7: Wish to die or suicidal ideas	72 (51.8%)
MHS8: Attention and concentration problems 67	(48.2%)
MHS9: Anxious distress	62 (44.6%)
MHS10: Low self-confidence	26 (18.7%)
MHS11: Auditory hallucinations	35 (25.2%)
MHS12: Paranoia	45 (32.4%)
MHS13: Obsessive symptoms	74 (53.2%)
MHS14: Elevated or Irritable mood	72 (51.8%)
MHS15: Problematic substance use	13 (9.4%)

Total is more than 100% as participants have reported more than one problem.

Table3: Correlation between internet addiction, perceived stress, and mental health problems in study participants (N=139)

Study Variable	1	2	3
1. YIAT score	1.00	0.303 (<0.01)*	0.404 (<0.01)*
2. PSS score	0.303 (<0.01)*	1.00	0.301 (<0.01)*
3. MHS score	0.404 (<0.01)*	0.301 (<0.01)*	1.00

* p-value <0.05

Discussion

The current study aimed to find out the frequency and pattern of mental health problems, perceived stress, and internet addiction among the undergraduate students. It also aimed to explore the relationship between internet addiction, perceived stress, and mental health problems. On the basis of responses to mental health screening questionnaire, about 64.7% and 7.2% of participants reported somewhat difficulty, and very much or extreme difficulty respectively suggesting that 71.9% of the students were likely to benefit from a psychiatry consultation. About 7.2% of study participants reporting severe difficulty with mental health problems is in line with the reported prevalence of about 10% for mental disorders among adults from the recent National Mental Health Survey of Nepal.[15] The most important thing to note here is that the tool used in present study was meant only for screening mental health problems. Also, when we look at the individual self-reported mental health symptoms profile; there was high preva-

lence for endorsement of symptoms like 48.2% for sleep problems, and 51.8% for suicidal ideation. Further, about 9.4% acknowledged substance use in the study sample. These findings highlight the need of creating mental health awareness for promoting help seeking behaviours in college student population. Though, the isolated symptom(s) endorsement might not have much weightage for making a psychiatric disorder diagnosis; but these could very well provide a clue towards the need for a detailed evaluation focusing on these problem areas. However, these findings need to be interpreted with caution as only 7.9% of students reported to have high perceived stress. But, about 85.6% students reported at least moderate levels of perceived stress supporting the utility of providing stress management training or session to this group of undergraduate college students.

The prevalence of moderate internet addiction was 18.7% and none of the students had severe internet addiction.There have been varying prevalence rates of internet addiction reported among students ranging from 6.0 % to as high as 30.1%.[16, 17] Also, the study among undergraduate students from eight countries has shown a prevalence of 8.4% for problematic internet use in which the prevalence of Nepal was 12.6 %.[18] This difference in the prevalence rate of internet addiction could be explained on the basis of a lack of consensus regarding assessment of internet addictionand lack of well-accepted gold standard assessment method (e.g. assessment instrument, cut-offs used for making diagnoses, etc.).[19]

There was significant positive correlation of the MHS score (indicative of number of mental health problems) with the Young's internet addiction test score and perceived stress scale scores among study participants. This finding is in line with most of the published literature. A study from 494 undergraduate students of medical and allied sciences in Nepal showed that internet addiction was related with poor sleep quality and depression.[7] Similar finding was reported in another study from India among 854 students using Internet addiction test and Hamilton Anxiety Rating Scale where internet addiction was found to have significant positive correlation with overall anxiety, psychic anxiety, and somatic anxiety symptoms.[20] The positive correlation of internet addiction and mental health problems among students have been replicated in studies throughout the world.[21, 22, 23] In our current study we found that severity of internet addiction and perceived stress levels had significant positive correlation. This finding is similar to an online survey done in India during COVID-19 pandemic among 297 students of various professional courses using perceived stress scale.[24] Another cross-sectional survey study from Saudi Arabia among 2675 school students from 40 randomly selected schools using the 7-item Game Addiction Scale and the 10-item Perceived Stress Scale showed that addiction was strongly associated with stress in the adjusted analysis.[25] Similar findings were also reported in another study conducted among 293 university students of Lebanon. [26]

The strength of the current study is that we could collect data during the awareness session and could provide feedback based on the assessment findings. This is one of the few studies from Nepal to assess mental health problems, perceived stress, and internet addiction related problems simultaneously in the study participants. However, this study has some limitations too. This was a cross-sectional study, and thus it is not possible to infer directionality or causality in the relationship between internet addiction, mental health problems and perceived stress. Also, of the use of self-administered questionnaires might have introduced some degree of social desirability and recall biases. Another important aspect is that this study has taken students from a single college, limiting the generalizability of the study findings to college students for the entire country. We would recommend a more culturally contextualized version of internet addiction test for use in Nepalese setting. Future research with a more representative study sample and a longitudinal study design should be planned to better estimate the extent of internet addiction and characterize its relationship with mental health problems and perceived stress.

Conclusion

There is significant burden of mental health problems, stress and problematic internet use among the undergraduate college going students in Nepal. There is also a significant positive correlation of the MHS score (indicative of number of mental health problems) with the Young's internet addiction test score and perceived stress scale scores highlighting a need to develop effective interventions targeting all three problems holistically.

Conflict of interest:

None

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References

1. Arias D, Saxena S, Verguet S. Quantifying the global burden of mental disorders and their economic value. eClinicalMedicine [Internet]. 2022 Dec 1 [cited 2023 Aug 20];54. Available from: https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(22)00405-9/fulltext
2. Solmi M, Radua J, Olivola M, Croce E, Soardo L, Salazar de Pablo G, et al. Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 epidemiological studies. Mol Psychiatry. 2022 Jan;27(1):281–95.
3. Pedrelli P, Nyer M, Yeung A, Zulauf C, Wilens T. College Students: Mental Health Problems and Treatment Considerations. Acad Psychiatry J Am Assoc Dir Psychiatr Resid Train Assoc Acad Psychiatry. 2015 Oct;39(5):503–11.
4. Khadka R, Bista S, Bista S, Sapkota S, Baskota S. Prevalence of Anxiety and Depression among College Students in Kathmandu, Nepal. One Health J Nepal. 2022 Aug 15;2(1):36–9.
5. Kafle B, Bagale Y, Kadhum M, Molodynski A. Mental health and burnout in Nepalese medical students: an observational study. Middle East Curr Psychiatry. 2021 Aug 24;28(1):53.
6. Sharma P, Shakya R, Singh S, Balhara YPS. An online survey of problematic internet use and its correlates among undergraduate medical students of Nepal. Neurol Psychiatry Brain Res. 2020 Sep 1;37:95–9.
7. Paudel L, Sharma P, Kadel AR, Lakhey K, Singh S, Khanal P, et al. Association Between Internet Addiction, Depression and Sleep Quality Among Undergraduate Students of Medical and Allied Sciences. J Nepal Health Res Counc. 2021 Dec 14;19(3):543–9.
8. Karki K, Singh DR, Maharjan D, K. C. S, Shrestha S, Thapa DK. Internet addiction and sleep quality among adolescents in a peri-urban setting in Nepal: A cross-sectional school-based survey. PLoS ONE. 2021 Feb 18;16(2):e0246940.
9. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav. 1983 Dec 1;24(4):385–96.
10. Lee EH. Review of the Psychometric Evidence of the Perceived Stress Scale. Asian Nurs Res. 2012 Dec 1;6(4):121–7.
11. Young KS. Internet Addiction: The Emergence of a New Clinical Disorder. Cyberpsychol Behav. 1998 Jan 1;1(3):237–44.
12. Frangos CC, Frangos CC, Sotiropoulos I. A Meta-analysis of the Reliabilty of Young's Internet Addiction Test. In: Proceedings of the World Congress on Engineering. 2012.
13. Krishnamurthy S, Chetlapalli SK. Internet addiction: Prevalence and risk factors: A cross-sectional study among college students in Bengaluru, the Silicon Valley of India. Indian J Public Health. 2015;59(2):115–21.
14. Sharma P, Devkota G. Mental health screening questionnaire: A Study on reliability and correlation with perceived stress score. J Psychiatr Assoc Nepal. 2019 Dec 31;8(2):4–8.
15. Dhimal M, Dahal S, Adhikari K, Koirala P, Bista B, Luitel N, et al. A Nationwide Prevalence of Common Mental Disorders and Suicidality in Nepal: Evidence from National Mental Health Survey, 2019-2020. J Nepal Health Res Counc. 2022 Mar 13;19(4):740–7.
16. Cheng C, Li AY lam. Internet Addiction Prevalence and Quality of (Real) Life: A Meta-Analysis of 31 Nations Across Seven World Regions. Cyberpsychology Behav Soc Netw. 2014 Dec;17(12):755–60.
17. Zhang MWB, Lim RBC, Lee C, Ho RCM. Prevalence of Internet Addiction in Medical Students: a Meta-analysis. Acad Psychiatry. 2018 Feb 1;42(1):88–93.
18. Pal Singh Balhara Y, Doric A, Stevanovic D, Knez R, Singh S, Roy Chowdhury MR, et al. Correlates of Problematic Internet Use among college and university students in eight countries: An international cross-sectional study. Asian J Psychiatry. 2019 Oct 1;45:113–20.
19. Laconi S, Rodgers RF, Chabrol H. The measurement of Internet addiction: A critical review of existing scales and their psychometric properties. Comput Hum Behav. 2014 Dec 1;41:190–202.
20. Ranjan LK, Gupta PR, Srivastava M, Gujar NM. Problematic internet use and its association with anxiety among undergraduate students. Asian J Soc Health Behav. 2021 Oct 1;4(4):137.
21. Zhang G, Yang X, Tu X, Ding N, Lau JTF. Prospective relationships between mobile phone dependence and mental health status among Chinese undergraduate students with college adjustment as a mediator. J Affect Disord. 2020 Jan 1;260:498–505.
22. Uddin MS, Mamun AA, Iqbal MA, Nasrullah M, Asaduzzaman M, Sarwar MS, et al. Internet Addiction Disorder and Its Pathogenicity to Psychological Distress and Depression among University Students: A Cross-Sectional Pilot Study in Bangladesh. Psychology. 2016;07(08):1126.
23. Feizy F, Sadeghian E, Shamsaei F, Tapak L. The relationship between internet addiction and psychosomatic disorders in Iranian undergraduate nursing students: a cross-sectional study. J Addict Dis. 2020 Feb 17;38(2):164–9.
24. Gupta R, Singh U, Singh B, Singh P, Jangid P. Students’ Perceived Stress and Internet Addiction during the Lockdown in India. Indian J Priv Psychiatry. 2020 Dec 11;14(1):30–4.
25. Rajab AM, Zaghloul MS, Enabi S, Rajab TM, Al-Khani AM, Basalah A, et al. Gaming addiction and perceived stress among Saudi adolescents. Addict Behav Rep. 2020 Jun 1;11:100261.
26. Samaha M, Hawi NS. Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. Comput Hum Behav. 2016 Apr 1;57:321–5.