Internet Addiction and Depression in Pakistani Students: A Prevalence Study

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ABSTRACT

College students are becoming susceptible to mental health and dysfunctional technology use. Depressive symptoms and internet addiction are the most common in the young adults in the academic setting, but little empirical data available on the Pakistani context. This paper discussed the use of internet problem and moderate to severe depressive symptoms prevalence among undergraduate students and differences among demographics. A group of 400 university students aged 18-26 years pass through standard tests such as Internet Addiction Test (IAT) on Internet Addiction by Young and Patient Health Questionnaire-9 (PHQ-9). Group statistics and descriptive statistics were performed. Over a third of students were in the moderate range of internet addiction, that is, reported high rates of problematic using, and there were some with more severe symptoms. Also, a significant percentage of the sample were above the clinical threshold (PHQ-9 ≥ 10) regarding moderate-to-severe depressive symptoms, meaning that there were serious mental health issues among the students. Male students had rather higher internet addiction levels, but depressive symptoms were not found to differ significantly in demographic subgroups. The results reveal significant indicators of digital overuse and depression in Pakistani students in universities, which should focus on prevention by targeting case prevention, mental health screening activities, and global awareness efforts in the campuses. Future studies need to conduct intermediating psychosocial processes and longitudinal trends to reinforce early detection and intervention action plans.

Keywords: Internet addiction, Depression, University students, Mental health, Pakistan.

INTRODUCTION

Students in universities are subject of growing academic, emotional, and social pressures, putting them at a high risk of developing mental health issues, especially depression and technology-based behavioural issues. The internet consumption in the digital age has penetrated in academic research, entertainments, communication, and socialization (Shahzadi, Mufti & Arshad, 2025). Whereas moderate use has been found to enhance learning and connectivity globally, overuse or improper use can ultimately lead to problematic use that is known as the internet addiction (Shahzadi & Toor, 2025). These actions can also result in emotional discomfort, maladapted performance, and decreased academic achievements (Kuss & Pontes, 2021). This is especially true of the young adults who are at universities because of the unbridled access to devices, due to pressure in their studies and greater freedom about day-to-day activities. In turn, the first step to predict the prevention and early interventions practices is to comprehend the powers of internet addiction and depressive symptoms in the student population.

Universal studies indicate that the prevalence of psychological distress and excessive use of the internet has been on the increase, particularly during the years when the mass use of technologies began to grow and

during the year of the outbreak of the COVID-19 pandemic and its social consequences (Huckins et al., 2020; Lin et al., 2022). Closure of universities, distance learning, and social distancing slowed mental health considerations in young people even more, taking a larger proportion of screens and causing greater stress (Shahzadi, Mufti & Arshad, 2025). Pakistan is not an exception: questionnaires of university students indicate an increasing number of depressed, anxious, and problematic internet cases, but little data remains empirical and is sometimes referring to one institution or a limited sample (Ashraf and Naureen, 2021). There is thus the need to have robust prevalence data to know about the extent of the problem and be able to inform policy making in institutions of higher learning.

The current research is based on the sample of 400 students of the university to examine the level of occurrence and extent of problem and moderate-severe depressive symptoms. The study provides the estimation of the rates among such a student group, which can be taken as the local-ground evidence in the research area that is not already well-researched in the South Asian and Pakistani context (Afzaal, Toor & Shahzadi, 2023). These results can help universities, psychologists, and education policymakers to recognize at-risk populations, recreate special counselling interventions, and deploy digital hygiene awareness campaigns. Such baseline prevalence data will also be critical to enhancing screening areas and future analytical research based on causal pathways between digital behaviors, sleep disturbance, academic dysfunction, and psychological outcomes (Shahzadi & Toor, 2025).

Problematic amount of internet use is sometimes termed as internet addiction, and is generally defined as an unchecked or overly utilized usage of internet activities to cause distress or impairment (Young, 1998). Though not defined as a clinical disorder in the key diagnostic systems, it is broadly discussed in the current-day research of behavioral health as a growing issue among teenagers and young adults. Students of universities tend to experience higher levels of problematic use than the general population because of adaptable schedules, unlimited access to devices, online learning environments of educational institutions, and peer pressure to be constantly active (Kuss and Pontes, 2021).

According to recent reports on epidemiological research, prevalence rates vary between 15% and over 40% based on university population location, measuring tool, and cutoff point (Zhang et al., 2021). A 2022 meta-analysis concluded that some of the highest rates are recorded in Asia, possibly because of the rapid hasty growth of digital technologies, a high level of academic competition, and sociocultural tolerance towards extensive use of the Internet (Lin et al., 2022). Other studies which are developing in Pakistan also point in the same direction. According to Saleem and Mahmood (2023), approximately one-third of the surveyed students, these students attend universities, indicated moderate to severe problematic internet use, which is observed in the region. These results indicate that internet addiction currently represents a widespread concern of young adults in higher learning institutions that should be monitored systematically. It is also indicated that gender-related differences exist in the digital behaviors. Male students tend to show an elevated rate of problematic internet use, especially when it is related to online playing or entertainment, and female students could be more occupied with communication via social media (Kircaburun et al., 2020). The literature on Pakistani samples also indicates a marginally prevalent problematic use in male samples, yet marginally, the effect sizes are consequently small and might be different across institutions and fields (Ashraf and Naureen, 2021). Through these trends, effective gender comparisons among South Asian student samples are still incomprehensible, which means that future empirical studies are necessary.

One of the most prevalent mental health issues in the young adult demographic is depression, which is linked to poor academic performance, poor concentration, sleeping problems, and inabilities in personal and social roles. Depressive symptoms can also develop in university life because of competition in school, time pressures, financial pressures and due to social changes, that coincide with new adulthood (Afzaal, Toor & Shahzadi, 2023). The world prevalence estimates indicate that close to 20 to 35% of university

students have their depressive symptoms that are clinically significant at some point in their acidic life span (Auerbach et al., 2020). The fear also escalated as a result of the COVID-19 pandemic that caused even more isolation, academic disruption, and dependence on online systems causing even greater psychological distress to student cohorts (Huckins et al., 2020).

The presence of depression among university students is a highly reported phenomenon in Pakistan, and recent research findings indicate a prevalence rate of between 25 and more than 40 percent basing on characteristics of a sample and method of screening (Muhammad & Bano, 2022). Nonetheless, even with the growing interest, scant literature on prevalence data on a large-scale basis regarding internet use as well as mental health simultaneously are scarce. Further studies using standardized instruments are required to offer better directions of counselling facilities, student services, and policymakers (Afzaal, Toor & Shahzadi, 2023).

There is a mounting amount of evidence that indicates that there exists a relationship between too much internet use and depression. The negative effects of spending long periods of time on the internet can be disturbed sleep patterns, lack of exercise and physical activity, loss of the ability to interact directly with people, lack of concern about obligations to academic work, which, in combination, predisposes students to emotional problems (Kircaburun et al., 2020). Besides, problematic internet use may also serve as a maladaptive response to stress and adverse feelings, which supports a dependency loop and deteriorates mental health processes (Li et al., 2023).

Longitudinal research indicates that the rate of depressive symptoms in the future might be predicted by over-digitalization and that high depressive symptoms might also cause people to use online activities to become more distracted or feel depressed, creating a two-way relationship (Huckins et al., 2020). Nonetheless, these dynamics can be different depending on the cultural settings, the nature of internet activities (e.g., gaming, social networking, streaming) and some individual factors (e.g. gender, coping style, perceived social support). In Pakistan, empirical studies investigating such pathways are still in development, and the majority of the existing research is based on cross-sectional data. More extensive research studies are required to shed more light on the fact of whether high rates of internet usage are a cause, effect, or correlation of emotional distress amongst student populations.

The Need for Prevalence Data in the Pakistani Context

Although the intersection of internet use and mental health is a topic that has been well researched on the international level, a major gap would be prevalence-based research in the context of higher education environment in Pakistani sphere. A lot of the literature is institution specific, small sample or methodology restricted in generalizations. Right prevalence estimates are essential at least because of four reasons. First, they help universities to allocate resources to mental health, as well as planning prevention programs. Second, they offer a point of reference in assessing future longitudinal pattern. Third, they aid the provision of counselling and psychological services that assist in the early identification of risk groups. Last of all, prevalence reports are useful in regional and global comparisons, which reveal sociocultural disparities, which can affect online behavior and feelings.

Collectively, the above literature reveals that both internet addiction and depressive symptoms are major and an increasing issue in university students worldwide, including South Asia. Nevertheless, there are still breaks as far as detailed prevalence research in the Pakistani educational environment is concerned. The current research will meet this requirement when exploring online problematic internet use rates and moderate-to-severe depressive symptoms in a considerable sample of Pakistani university students, which

will serve as a source of data regarding policy formulation, mental health planning, and further analysis of risk and protective variables.

METHOD

Research Design

The research adopted a quantitative and cross-sectional survey to provide an approximation of prevalence estimate of problematic internet use and moderate-and-severe depressive symptoms amongst university students. The questionnaires were the standardized psychometric measures domain to evaluate internet addiction and the depressive symptomatology through validated measures that are widely used in research studies on mental health among international students.

Participants

Four hundred undergraduate students recruited in a Pakistani university which is on the public sector. The study sample was between 18 and 26 years old. There were 128 male and 272 female students as the sample. The students were mainly pursuing degree programs under the social science, arts, natural sciences, management, engineering, and information technology fields, making the students represent a diverse population. The convenience sampling was because of the access and institutional feasibility.

Measures

Internet Addiction

The impact of excessive or uncontrolled online behavior was determined using Young Internet Addiction Test (IAT) a 20-item self-report test of problematic internet use. Items will be rated with 5-point Likert scale with the higher the score the more problematic is the internet use. This tool has shown good psychometric stability in any international population and has extensively been used to filter behavioral risks among students in universities. Cutoff scores are used to categorize the respondents into normal, mild, moderate and severe categories of internet addiction.

Depressive Symptoms

Depression was measured in terms of the Patient Health Questionnaire-9 (PHQ-9), which is a screening instrument that is widely used in scholarly and healthcare to measure depression. The PHQ-9 consists of nine items rated on a 4-point scale, with scores ≥ 10 indicating moderate-to-severe depressive symptoms requiring clinical attention. The PHQ-9 has been validated across diverse cultural populations, including South Asian university samples.

Procedure

Data collection was conducted on campus using paper-and-pencil questionnaires administered during routine class sessions cafeterias and grounds. Informed consent was given to the students and they were insured about the privacy and confidentially of their research-based data. Students were briefed on the voluntary nature of participation and informed that their responses would remain confidential and used only for academic research. No personally identifiable information such as name, phone numbers and email address etc were collected so that students feel free to answers the statements genuinely. Each student completed the survey in approximately 15–20 minutes.

Ethical Considerations

Institutional and departmental approval was obtained prior to data collection. The administered scales were also used after the permission form the authors. Participants signed informed consent forms and were informed of their right to withdraw from the study at any time without penalty. Students showing scores indicating significant depressive symptoms were advised to seek support through campus counseling services.

Data Analysis

Data were entered and screened for missing values with incomplete cases removed prior to analysis. Descriptive statistics, including means, standard deviations, and frequency distributions, were computed for all study variables. Prevalence rates of problematic internet use and clinically significant depressive symptoms (PHQ-9 $\geq$10) were calculated.

RESULTS

Table.1

Descriptive Statistics of Study Variables

Variable	Mean	SD
Internet Addiction (IAT)	42.00	15.42
Depressive Symptoms (PHQ-9)	11.31	5.20

Table 1 indicated that the means and standard deviations of the major variables. On average, students demonstrated moderate internet use M= 42, SD=15.42 and elevated levels of depressive symptoms M=11.31, SD=5.20). Sleep problems were also noticeable, with an average PSQI score indicating below-optimal sleep quality. Self-esteem scores appeared in the lower normal range.

Table.2

Prevalence of Internet Addiction Categories

Category	Percentage (%)
Normal/Mild Use (< 40)	60%
Moderate Addiction (40–69)	35%
Severe Addiction ($\geq$ 70)	5%

Note. Categories based on Young's Internet Addiction Test cutoff scores.

Table. 2 indicated that the prevalence classifications were computed using Young's Internet Addiction Test (IAT) cutoff guidelines. More than one-third of students fell within the moderate-risk range which indicating patterns of excessive or difficult-to-control internet use. The proportion of the sample that had qualified as having a severe addiction was less, but this category was a significant behavioral problem. These results are consistent with the recent regional studies which point out the growing susceptibility among digitally active university communities. Gender comparisons showed significantly better scores in IAT of male students.

Table.3
Prevalence of Moderate-to-Severe Depressive Symptoms

PHQ-9 Category	Percentage (%)
Minimal/Mild (< 10)	60%
Moderate-to-Severe (≥ 10)	40%

Note. PHQ-9 clinical cutoff ≥10 indicates clinically significant depressive symptoms.

In table. 3, depressive symptoms were attributed through the established PHQ-9 clinical cutoff (≥10). Moderate-to-severe depressive symptoms were found in a significant percentage of the respondents (suiciding a significant level of effectiveness of this emotional distress to students). The rates of this prevalence are also comparable to recent national and international research that demonstrates high levels of psychological distress in university students under the influence of high academic pressure and social transformations after the pandemic. There were also no significant or statistically significant differences in the severity of depressive symptoms based on demographic factors, such as gender or place of residence (urban vs. rural). This indicates that emotional distress might be apparent among several groups of students and not restricted to certain groups of students on the basis of the demographic characteristics.

Table.4
Pearson Correlations Among Psychological Variables

Variable	IAT	PHQ-9	PSQI	RSES
Internet Addiction	—	.42**	.30**	.05
Depressive Symptoms	.42**	—	.42**	-.08

Pearson product-moment correlation was used to test major variables relationships. Internet addiction demonstrated a significant positive relationship with depressive symptoms ($r \approx .42$, $p < .01$), indicating that higher problematic internet use was associated with increased emotional strain. Internet addiction was also significantly correlated with poorer sleep quality ($r \approx .30$, $p < .01$), while sleep disturbances were strongly associated with depressive symptoms ($r \approx .42$, $p < .01$). These correlations reflect commonly observed behavioral patterns in university populations, in which excessive digital engagement is related to deteriorating sleep and mental health.

In contrast, self-esteem was only weakly and nonsignificant related to the other study variables, suggesting limited predictive importance in this cohort. This may reflect context-specific measurement issues or genuine weak associations between self-esteem and digital or emotional functioning in this population.

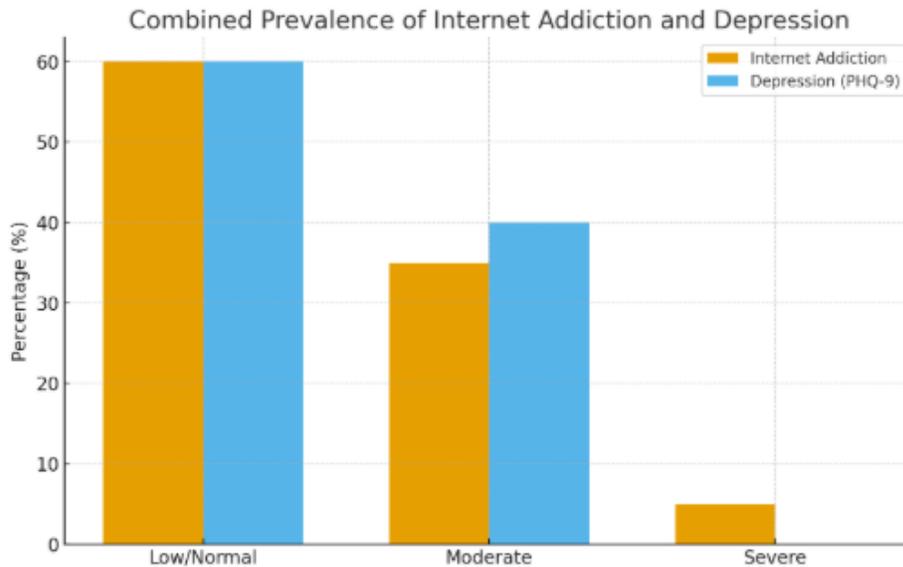Figure:1 graphic presentation of internet addiction and Depression

Figure 1 indicated that the participants of the study experience low/normal levels Internet Addiction and Depressive symptoms. Moderate levels are fairly common and it is suggesting that a notable subset of students may be at risk for increased Internet use and depressive symptoms. Figure also highlighted that severe cases are rare especially for Depression which indicating that extreme levels are not prevalent in this sample.

DISCUSSION

The findings of the present study provide compelling evidence that problematic internet use and depressive symptoms are highly prevalent among university students in Pakistan. Consistent with the data presented in Table A, more than one-third of the sample demonstrated moderate levels of internet addiction, while an additional 5% met severe criteria, indicating a meaningful risk of behavioral dysregulation and functional impairment. These figures mirror recent meta-analytic evidence showing that the global prevalence of problematic internet use among university populations ranges between 30% and 44%, with rates increasing further in post-pandemic academic environments (Liu et al., 2025; Yang et al., 2024).

The prevalence rate in this research correlates with the current literature regarding increased dependency on digital technologies to serve the academic need, entertainment, and social interaction, especially following the COVID-19 transition to online learning (Huckins et al., 2020). In line with that, Table B indicates that 40 percent of students have moderate- to severe levels of depressive symptoms per PHQ-9 clinical cutoff scores, which aligns with the literature in the region that has reported a high level of psychological agony among South Asian university students after the increased academic demands, economic insecurity, and lifestyle disturbance during the pandemic (Awan et al., 2023; Iqbal and Jami, 2022).

The high correlations between internet addiction, sleep disturbances, and depressive symptoms are consistent with well-known theoretical and empirical links, and recent scopes reproductively indicate that excessive use of internet can lead to sleep dysregulation, subsequently causing emotional distress (Zhao et al., 2023; Lin et al., 2022). These medium-effect models emphasize a cyclical nature in which poor digital usage negatively affects the quality of sleep and mental well-being, which supports the idea that centers on digital hygiene and sleep-based interventions are needed. Though Table 3 indicates that males have significantly higher internet addiction scores regarding its counterpart in females, the lack of gender disparities in the symptom of depression presupposes emotional distress is not exclusive to certain demographic groups (Shahzadi, Mufti & Arshad, 2025). It corresponds to the modern studies that show that gendered internet usage trends frequently vary depending on gaming in men and social networking in women, but both mental health impacts of the digital overuse are equally straightforward (Kuss and Pontes, 2021).

On the whole, the results of the combined study are indicative of a obvious and immediate necessity of the systematic screening, digital wellness education, and the availability of psychological support service in the university (Afzaal, Toor & Shahzadi, 2023). The trends observed in this thesis data set (Saman Afzaal, 2022) provide an indication that overuse of the internet, lack of sleep and signs of depressive symptoms are a cluster of risks that must be approached as a system and should not be examined independently to effectively contribute to the welfare of a student.

CONCLUSION

Precis, this current work shows that most of the university students in Pakistan have a problematic use of internet and moderate-severe depressive symptoms, which prove the necessity of institutional and psychological help. The interwoven trends, which can be observed between internet addiction and sleep disorder, as well as emotional distress, indicate that student well-being can be exposed to a complex interaction between digital practices and mental health variables. Although the prevalence of depressive symptoms was universal among demographic groups, the male students had higher risks of addictive internet usage habits, which explains why universal and specific prevention methods are required. These results, combined, underscore the need to implement broad-based screening and mental health awareness and skill-building programs in colleges and universities. These problems can be addressed promptly to avoid further development of mental stress and achieve healthier academic and personal performance of students.

LIMITATIONS

This research, though informative, also possesses some drawbacks, which should be mentioned. First, the cross-sectional design does not allow drawing any conclusions regarding the causality between issues related to the internet addiction and the quality of sleep and depressive symptoms; this is why it is not clear whether problematic use of internet is the cause of emotional distress or depression. Second, use of self-report questionnaires is subject to recall bias and social desirability effects which can affect the accuracy of reporting on the symptoms. Third, the sample was chosen in one university, which belongs to the public sector, restricting the generalization of the study to students in the private universities, rural universities and other provinces in Pakistan. Finally, when measured in terms of academic workload, family stress, and financial strain that might also affect digital behavior and mental health, environmental and personal factors were also not evaluated, which points to the possibility of considering future studies as more multi-dimensional.

RECOMMENDATIONS

With the results of the study, they can be applied in practical recommendations to universities, mental health practitioners, and researchers in the future. Universities must put in place regular mental health screening of students, especially in the use of brief and reliable instruments like the PHQ-9, to detect mentally distressed students in the early stages of the academic year. The presence of trained clinical psychologists in counselling centres to provide short-term interventions, psychoeducation and referrals should be reinforced. Since there is a positive correlation between internet addiction and sleep issues along with depressive symptoms, the institution should consider introducing the digital hygiene, sleep related, and stress reduction workshops. The students need to be urged to have a better technology behavior, which includes reducing the number of hours they view a screen at night, setting a use limit within the day, and focusing on offline social and athletic interactions. For future research, longitudinal and multi-university studies are recommended to better understand causal pathways and enhance generalizability.

REFERENCES

Afzaal, S., Toor, M. A., & Shahzadi, N. (2023). Sleep Quality, Internet Addiction, Mental Health and Self-Esteem of Students. *Online Media and Society*, *4*(4), 43-50. https://doi.org/10.71016/oms/jsa2en20

Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., … & WHO WMH–ICS Collaborators. (2020). WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology, 129*(1), 1–16. https://doi.org/10.1037/abn0000493

Ashraf, F., & Naureen, S. (2021). Problematic internet use, psychological distress, and academic performance among university students in Pakistan. *Pakistan Journal of Psychological Research, 36*(2), 245–260. https://doi.org/10.1016/j.sleep.2022.11.003

Awan, S., Imran, N., & Haider, I. (2023). Depression, anxiety and stress among university students in Pakistan after COVID-19: A cross-sectional study. *BMC Psychiatry, 23*, 112–120. https://doi.org/10.1186/s12888-023-04733-9

Huckins, J. F., daSilva, A. W., Wang, W., Hedlund, E., Rogers, C., Nepal, S., … & Campbell, A. T. (2020). Mental health and behavior of college students during the early phases of the COVID-19 pandemic: Longitudinal smartphone and ecological momentary assessment study. *Journal of Medical Internet Research, 22*(6), e20185. https://doi.org/10.2196/20185

Iqbal, N., & Jami, H. (2022). Prevalence and predictors of depressive symptoms among university students in Pakistan. *Journal of Behavioural Sciences, 32*(1), 45–62.

Kircaburun, K., Griffiths, M. D., & Billieux, J. (2020). Psychological consequences of problematic internet use: A systematic review. *Current Psychiatry Reports, 22*(3), 7–19. https://doi.org/10.1007/s11920-020-1134-6

Kuss, D. J., & Pontes, H. M. (2021). Internet addiction. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *The SAGE handbook of personality and individual differences* (Vol. 2, pp. 445–460). SAGE Publications

Li, X., Zhang, S., & Wang, Y. (2023). Links between problematic internet use, sleep disturbance, and depression: Evidence from a longitudinal study among emerging adults. *Sleep Medicine, 100*, 403–410. https://doi.org/10.1016/j.sleep.2022.11.003

Lin, M. P., Chang, F. C., & Lee, C. M. (2022). Trends of internet addiction among college students before and during the COVID-19 pandemic. *Cyberpsychology, Behavior, and Social Networking, 25*(6), 394–401. https://doi.org/10.1089/cyber.2021.0260

Liu, X., Gui, Z., Chen, Z.-M., Feng, Y., Wu, X.-d., Su, Z., … & Xiang, Y.-T. (2025). Global prevalence of internet addiction among university students: A systematic review and meta-analysis. *Current Opinion in Psychiatry, 38*(3), 182–199. https://doi.org/10.1097/YCO.0000000000000994

Shahzadi, N., & Toor, M. A. (2025). Personality Predictors of Job Performance: Evidence from the Big Five Model in a Pharmaceutical Workforce. *Research Journal for Social Affairs*, *3*(5), 67-72. https://doi.org/10.71317/RJSA.003.05.0302

Shahzadi, N., Mufti, S., & Arshad, M. (2025). Mental Health Challenges in University Students: The Role of Eating Disorders in Depression. *ACADEMIA International Journal for Social Sciences*, *4*(2), 207-218. https://doi.org/10.63056/ACAD.004.02.0168

Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior, 1*(3), 237–244. https://doi.org/10.1089/cpb.1998.1.237

Zhang, M. W., Lim, R., & Ho, R. C. (2021). Prevalence of internet addiction in Asia: A systematic review. *Journal of Behavioral Addictions, 10*(2), 378–389. https://doi.org/10.1556/2006.2020.00050

Zhao, F., Li, X., & Sun, J. (2023). Sleep quality as a mediator between problematic internet use and depressive symptoms among university students. *Journal of Affective Disorders, 330*, 211–218. https://doi.org/10.1016/j.jad.2023.10.021