

Original Article

Association between quality of life dimensions and internet addiction of college students

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Abstract

Background: Although the internet has brought significant opportunities in economic, communication, and scientific fields for societies, its excessive and inappropriate use, especially during the prevalent of COVID, poses a serious and important threat to the health. The aim of the current research was to examine the link between life quality dimensions and internet addiction of college students.

Methods: This cross-sectional investigation was done on a sample of 400 students from Alzahra University in Mashhad, Iran. The data for this research was collected using three different questionnaires: a demographic questionnaire, an internet addiction questionnaire, and a quality of life questionnaire. The statistical analysis was done using SPSS 24.

Results: The majority of studied students (62.5%) were found to have a moderate level of internet addiction. Additionally, 21% of them had a normal level of addiction to internet, while 16.5% were classified as having a severe level of addiction. Furthermore, the results indicated negative correlations between all dimensions of life quality and internet addiction ($p < 0.001$). Furthermore, psychological domain was the stronger predictor of internet addiction ($p < 0.001$, $\beta = -0.45$).

Conclusion: According to the results of current investigation, it is evident that the psychological domain plays a significant role in predicting internet addiction. Therefore, it is crucial to focus on this variable in educational interventions, particularly for individuals who are classified as having a severe level of internet addiction. By addressing psychological factors and providing appropriate interventions, it is possible to achieve better outcomes in terms of preventing internet addiction behaviors. If someone suffers from clinical problems such as depression and anxiety, she/he is at higher internet addiction risk since some might utilize the internet in order to distract yourself from fears and concerns.

Keywords: Internet Addiction Disorder; Quality of Life; Students; Universities.

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Introduction

In today's world, the internet has become an integral part of universities and educational organizations. It plays a crucial role in facilitating learning and

acquiring essential skills, particularly during challenging times like the prevalent of COVID (1). While the internet has undoubtedly brought numerous benefits in

terms of economic, communicative, and scientific advancements, it is important to acknowledge that inappropriate usage of the internet can have detrimental effects on individuals' well-being and health, especially among young people (2). Therefore, while recognizing the benefits of the internet, it is crucial to promote responsible and balanced internet use among individuals of all ages. Education and awareness programs should be implemented to help individuals develop healthy digital habits and navigate the online world safely. According to reported statistics, Iranian internet users has grown from 11 million in 2002 to over 62 million in 2019. This represents a remarkable growth rate of over 25 times within this period (3). The rapid increase in internet usage among young Iranians highlights the need for addressing potential risks associated with excessive or inappropriate internet use. It is crucial to promote digital literacy and responsible online behavior among young people to ensure their well-being and safety in the digital world.

Internet addiction was first described in the early 1990s and has since gained attention as a behavioral addiction associated with excessive and compulsive internet use (4). Negative consequences of internet addiction can include impaired social relationships, academic or occupational problems, neglect of personal responsibilities, and negative impacts on mental and physical health (4). Previous investigations have suggested potential associations between internet addiction and various social, mental, and physical issues (5, 6). Nevertheless, it is required to more investigate to exactly realize the nature of these relationships and create causal associations.

Quality of life is indeed a main factor that can influence to internet addiction. Quality of life encompasses various dimensions that reflect individuals' overall well-being (7). These dimensions include objective and mental status of people lives within their

economic and sociocultural environments (8). Furthermore, quality of life represents a holistic health outcome, reflecting individuals' perceptions of their physical and mental health, social relationships, and overall well-being (9). Research has indeed indicated a potential relation of internet addiction and psychological disorders (10). For example, for individuals with depression, the internet can provide an escape from negative thoughts and emotions. It may offer a temporary relief or distraction from their symptoms. Similarly, individuals with anxiety perhaps use the internet as a method to seek reassurance, information, or social support. Therefore, addressing the underlying factors that influence an individual's quality of life is crucial in preventing and managing internet addiction. This includes promoting mental health, providing adequate social support systems, improving access to resources and opportunities, and creating a balanced lifestyle that encourages healthy offline activities.

Given the factors mentioned earlier and the substantial rise in people's dependence on the internet amid the prevalent of COVID, where remote work and online tools have become indispensable, it is vital to comprehend the elements that contribute to internet addiction. With the heightened daily usage of the internet, it becomes necessary to identify and recognize predictive factors associated with this phenomenon. The objective of the current investigation was to study the correlation between internet addiction and various aspects of quality of life in university students. By examining this relationship, we can develop interventions that promote healthy internet use habits, establish limits, and identify potential signs of addiction at an early stage.

Methods

This cross-sectional investigation involved the students from Alzahra University in Mashhad, Iran. The final analysis utilized a multiple linear regression model, and the

initial sample size was determined to be 130 individuals based on Green's formula (11). On the other hand, according to the use of multi-stage (stratified-cluster) sampling, taking into account the study design effect equal to 3.07, and the sample size was 400 people. At the start of the study, all students who participated were asked for their informed consent. The ethics board at Mashhad University of Medical Sciences granted approval for the investigation. The inclusion criteria for the present study include: individuals' willingness to enter the study, being a student (Study participants must have completed at least one academic semester), and Iranian citizenship. Also, incomplete completion of the questionnaires was considered as exclusion criteria.

Information of demographic like participants' marital status, age, and education was assessed in the first section of the questionnaire.

Internet addiction was determined by the Internet Addiction Test of Young (12). The validity of this questionnaire was affirmed by Alavi et al in Iran (13). The questionnaire includes of 20 items that use a 5-point Likert to evaluate the extent of habitual internet usage. Scores on this questionnaire can range from 20 to 100. The severity of internet addiction is categorized into three levels: severe (80-100), moderate (50-79), and low (20-49) (13). Additionally, the reliability of this questionnaire was estimated by Cronbach's alpha on a sample of 30 students, resulting in a value of 0.88.

To investigate the quality of life, we utilized the World Health Organization Quality of Life Questionnaire (14). The validity of this questionnaire was affirmed by Nejat et al in Iran (15). This questionnaire includes of 26 items that utilize a 5-point Likert. It includes two general questions about overall health and 24 questions divided into four domains: social (3 questions), environmental (8 questions), psychological (6 questions), and

physical (7 questions). To estimatr the questionnaire reliability, Cronbach's alpha test method was employed on a sample of 30 students. The range of the Cronbach's alpha for the variables was between 0.75 and 0.86, indicating good internal consistency.

The statistical analysis was conducted by SPSS 24. To measure the role of variables and the predictive power of the model, linear regression analyses were performed. This allowed for an assessment of how each variable contributed to the outcome and how well the model as a whole predicted the outcome. Additionally, Pearson correlation examination was done to explore the relationships between variables.

Results

The mean age of the students was found to be 21.39 years. Out of the total number of students, 92 were married, accounting for approximately 23% of the sample, while the remaining 308 students were single, making up about 77% of the sample. In terms of education, the majority of students (269) had an Associate degree, representing approximately 67.3% of the sample. On the other hand, there were 131 students with a Bachelor of Science degree, accounting for around 32.8% of the sample (table 1).

Table 1. Demographic information of the studied students

Age (year), Mean (Standard Deviation)	21.39 (3.12)
Education, Number (%)	
Bachelor science	131 (32.8)
Associate degree	269 (67.3)
Marital status, Number (%)	
Married	92 (23)
Single	308 (77)

Table 2 presents the mean values for life quality and its subscales, and also internet addiction.

As displayed in the table 3, most of the studied students were of a moderate level of addiction to internet (62.5%), 21% of the participants were of the low level, and 16.5% were of a severe level.

Table 2. Means of Life quality dimensions and Internet addiction

Variable	Mean	Standard deviation
Life quality	59.60	6.75
- Psychological domain	55.39	11.43
- Physical domain	66.44	11.07
- Social relationships	63.06	18.15
- Environment	61.54	15.78
Internet addiction	60.08	17.51

Based on the analyses of linear regression, psychological domain was the stronger predictor of internet addiction (table 4).

As shown in table 5, there were negative correlations between between internet addiction and all dimensions of life quality ($p < 0.01$).

Table 3. Frequency and percent of Internet addiction intensity

Frequency	Internet addiction	
	No.	Percent
Low	84	21
Medium	250	62.5
High	66	16.5

Discussion

The problem of internet addiction in university students in Iran is a major health issue, particularly considering the prevalent of COVID. To address this issue effectively, it is crucial to screen students using reliable scales such as the Internet Addiction Scale. This screening procedure

can assist in identifying key issues related to internet addiction and provide valuable insights for the creation of educational programs and interventions. By examining this relationship, we can gain a deeper understanding of how internet addiction impacts different aspects of students' lives, such as their physical and mental well-being, social relationships, and overall satisfaction. This knowledge will be invaluable in designing targeted interventions and educational initiatives to support students in managing their internet usage and promoting a healthier balance in their lives.

The findings of current study revealed that a staggering 79% of the studied students were addicted to internet. Additionally, the results indicated that the psychological and social domains were the strongest predictors of internet addiction, respectively. These findings align with a research conducted by Nagori et al, which determined that as the severity of psychological disorders increases, the likelihood of internet addiction also increases (16). Similarly, Solati et al's research results also indicated a significant association between quality of life various dimensions and internet addiction (17).

Individuals who experience clinical conditions such as depression and anxiety are more susceptible to developing internet

Table 4. Coefficients of multivariate regression analysis of addiction to internet

Independent Variables	β standard	P	R ²	Dependent variable
Psychological domain	-0.45	0.0001	0.86	Internet addiction
Physical domain	-0.02	0.67		
Social relationships	-0.32	0.0001		
Environment	-0.17	0.002		

Table 5. Correlation matrix among among variables

Variables	Internet addiction	Psychological domain	Physical domain	Social relationships	Environment
Internet addiction	1	-0.91**	-0.84**	-0.90**	-0.88**
Psychological domain		1	-0.86**	-0.93**	-0.90**
Physical domain			1	-0.90**	-0.88**
Social relationships				1	-0.93**
Environment					1

** Correlation is significant at the 0.01 level

addiction. This is because some individuals perhaps resort to the internet as a way to escape or distract themselves from their fears and worries (18). Additionally, those who are predisposed to creating a secret life separate from others, experiencing feelings of inefficiency, low self-esteem, and fear of disapproval, are more susceptible to internet addiction (16, 19). Internet addiction can manifest as individuals seek refuge in social networking sites, using them as a means to establish relationships more confidently than in face-to-face interactions, often due to a lack of social support (16). Individuals who have an inclination to spend lesser time with other people, isolate themselves, and have fewer interpersonal relationships are more prone to developing internet addiction. These people seek refuge in social networking, using them as an alternative to establish relationships more confidently than in face-to-face interactions, often due to a lack of social support.

The present study discovered a robust and negative correlation between various dimensions of quality of life and internet addiction. These results were consistent with past investigation conducted by Nagori et al, that found that individuals with lower levels in environmental and psychological aspects were more probably to experience problematic internet use (16). This highlights the negative impact that excessive internet use can have on individuals' overall well-being and highlights the need for interventions and strategies to address addiction to internet and improve life quality. It emphasizes the importance of promoting a better quality of life for individuals to decreasing and addressing internet addiction.

Person's lifestyle has the potential to profoundly alter Internet addiction, affecting various aspects of their behavior and social relations (20, 21). Individuals may neglect their daily activities and responsibilities due to their excessive preoccupation with internet use. This can

lead to a depletion of energy levels as a result of decreased physical mobility and staying up late at night. Additionally, excessive internet use can have adverse effects on vision and disrupt sleep patterns (22, 23). Excessive computer uses and prolonged sitting, which often accompany internet addiction, can have detrimental effects on health. Furthermore, research has shown internet addiction is associated with higher prevalence of binge eating, weight concerns, and weight changes (22). Problematic internet use has also linked to problems of sleep, which can weaken the immune system and make individuals more susceptible to various illnesses (24). Research has shown that peoples with internet addiction tend to experience higher levels of alexithymia, depression, anxiety, and novelty seeking. They also tend to have lower scores in self-directedness and cooperativeness (25). In terms of social relations and quality of life, excessive internet use can lead to neglecting face-to-face interactions, spending less time with friends and family, and lacking motivation to complete tasks. This can result in increased isolation and dependence on the internet. Consequently, there is a decrease in social support, satisfaction with relationships, and overall quality of life. Academic performance may suffer as well, along with feelings of loneliness and social isolation (25). As mentioned earlier, it is recommended to develop educational programs that encourage students to use the internet and scientific sites responsibly. Seeking help and support is crucial for individuals struggling with this issue in order to address these challenges and improve their well-being.

We must acknowledge the limitations of our study. Firstly, it was a cross-sectional study, which means that longitudinal data would be necessary to accurately assess the findings over time. Additionally, relying on self-report methods introduces potential bias into our results. Furthermore, our study focused on a specific demographic or

population group, limiting the applicability of our results to other settings.

In addition to the acknowledged limitations, future research should prioritize identifying risk factors for internet addiction disorder and implementing evidence-based prevention programs. It is crucial to have ongoing monitoring and control measures in place to regulate internet usage among university students. Simultaneously, educational initiatives should be implemented to raise awareness about the potential negative consequences of misusing or excessively using this technology. By identifying specific risk factors associated with internet addiction disorder, researchers can develop targeted interventions to prevent its onset. These interventions could include educational campaigns, counseling services, and support programs aimed at promoting healthy internet use habits. Furthermore, universities and educational institutions should establish policies and guidelines that promote responsible internet use among students. This may involve setting limits on access to certain websites or implementing time restrictions on internet usage. Regular monitoring and evaluation of these measures will help assess their effectiveness and make necessary adjustments.

Conclusions

The findings of our investigation reveal negative relations between multiple dimensions of life quality and internet addiction. Notably, the psychological domain emerged as the most influential predictor of internet addiction. This suggests that focusing on the psychological aspect, especially in educational interventions targeting individuals with severe internet addiction, can lead to better outcomes in terms of preventing internet addictive behaviors. For some, the internet can serve as a coping mechanism or a means of distraction from their fears and concerns. This can create a cycle where individuals turn to the internet for

temporary relief, leading to excessive use and potential addiction. Interventions should focus on addressing the underlying mental health concerns while also promoting healthier coping strategies and alternative activities that can provide similar benefits without the negative consequences associated with excessive internet use. Providing support, counseling, and resources for individuals struggling with mental health issues can help reduce their reliance on the internet as a coping mechanism. These findings highlight the importance of implementing preventive measures, such as educational intervention programs, to promote appropriate internet usage among students.

Authors' Contribution

Sahar Mohammadnabizadeh participated in the writing and design of the study, performed the statistical analysis and drafted the manuscript. Mohammad Vahedian-Shahroodi participated in the writing and design of the study, helped to draft the manuscript, and read the paper critically for theoretical content and interpretation of study findings. Vahid Ghavami participated in design of the study and statistical analysis.

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Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Informed consent

At the beginning of the research, informed consent was taken from all students studied.

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