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Original Article

Happiness and Internet Addiction among High School Girls in Iran: A Single-Center Experience

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Abstract

Objective: Happiness is an essential component in measuring quality of life. Today, rapid internet use proliferation has led to adverse effects on this behavior of individuals and family structures.
Method: The statistical population consisted of 500 high school girls aged between 15 and 18 studying in 10th, 11th, and 12th grades at Shiraz, Iran, from February 2018 to March 2019. The data were collected using the Oxford Happiness Questionnaire (OHQ) and the Young's Internet Addiction Test (IAT). The test and the questionnaire were translated into Persian. The validity and reliability were approved by earlier studies in Iran. Five hundred high school students participated in the study.
Results: The mean age of the participants was 16.7 ± 0.97 years, and their grade point average (GPA) was 18.41 ± 7.92. Among the 500 participants, 55% (275) of fathers and 65.8% (329) of mothers had parents with a diploma degree, and 162 (32.4%) were affected by Internet Addiction (IA). The univariate analysis showed that participants' education field, parents' educational status, each parent's vocational status, participants' GPA, and their duration of Internet usage correlated with the IA ($P \leq 0.2$). Furthermore, multiple logistic analyses showed that mothers' education ($P < 0.055$) and participants' minutes of Internet usage ($P < 0.001$) correlated with IA.
Conclusion: There is a negative correlation between happiness score and internet addiction among high school female students in Shiraz, Iran.

Key words: *Happiness; Internet Addiction Disorder; Students*

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As a psychological state closely related to human emotions, happiness is a universal value, a fundamental cognitive component of human intelligence (1, 2), and an indication of personal growth. It is commonly considered as an essential component to evaluate quality of life worldwide (3, 4). Previous studies have revealed that happiness is affected more by a combination of various factors such as age, gender, lifestyle, relationships, and technology usage, rather than a single factor. The most significant factors impacting happiness are age and level of technology usage (5, 6). However, teenagers and young adults with higher happiness levels are characterized by better self-confidence and extraversion (7). Besides, communication technologies, particularly the internet, are among the most significant tools, the use of which has been growing exponentially among high schoolers who use it to access the information they need about almost anything they wish (3).

Today, the noticeable growth in internet usage has prompted researchers to investigate the potential disadvantages of online activities. Excessive online activities lead to internet addiction (IA) (8, 9), psychological complications, and sleep disturbances, ultimately adversely impacting the family structure and relationships (10-12). It is worth mentioning that more than 200 million people suffer from IA worldwide (13). Several studies have reported that internet and social media addiction can decrease level of happiness and affect young adults' life satisfaction negatively. Hence, any attempt to reduce the intensity of this addiction, especially among high school teenagers and young adults, is essential (9, 11, 14).

Numerous researchers have recently expressed enormous concerns about reduced levels of happiness or quality of life in many countries (15, 16). However, there is research gap concerning the possible link between happiness and internet addiction in high school girls, thus, requiring more cognitive research. Studying happiness among high school girls and its association with IA is critical since during this period, different events can exert long-term effects on high school girls, impacting their development and well-being in the future (17). This study aimed to provide a better understanding of the association between happiness and IA among high school girls in Shiraz, Iran.

Materials and Methods

Study design

This cross-sectional study was conducted on 500 high school girls aged between 15 and 18 years, studying 10th, 11th, and 12th grades in Shiraz in 2018. The mean age of the participants was 16.7 ± 0.97 years. Given that there were twelve schools in four areas with unequal populations and different levels of education, students were selected via a stratified proportional cluster random sampling method based on their level and the school of the participants. The subjects were informed about the study. Those unwilling to complete the questionnaires as well as the incomplete questionnaires were excluded from the study. Before the study, ethics committee approval was obtained from the Ethics Committee at the Shiraz University of Medical Sciences (IR.sums.med.rec.1398.105).

Measuring characteristic variables

Data were collected using a structured questionnaire. The first section of the questionnaire included characteristic variables such as age, level of education (10th, 11th, and 12th grade), grade point average (GPA) and number of family members, parental education status, socioeconomic status, parental vocational status, and duration of internet usage. The second section included Young's standard IA test (Table 1) (18). The test questions were scored using a 5-point Likert scale ranging from 1 to 5; thus, its potential overall score ranged from 20 to 100, with higher scores showing a higher tendency toward addiction. The reliability and validity of the Persian version of this questionnaire were approved in recent studies carried out in Iran (19).

The third part of the questionnaire was intended to measure happiness using the standard Oxford Happiness Questionnaire (OHQ). It consisted of twenty-nine items that had to be scored using a 4-point scale, ranging from 0 to 3, with statements such as ''I often experience joy and elation'', ''I feel I have a great deal of energy'', and ''I find beauty in some things.'' (20) As a result, this test had a potential overall score of 0 to 87, with higher scores indicating a higher level of happiness. The reliability and validity of the translated version of the questionnaire were approved by Alipour and Liaghatdar *et al.* (21, 22).

Statistical analysis

T-test and Chi-square test were used to assess the unadjusted relationship between the related risk factors and IA in the bivariate analysis. Also, a binary logistic regression was used to evaluate the effects of predicting factors on IA among high school students by controlling potential confounders. The Shapiro-Wilk test approved the normality of the happiness score. The data were analyzed in SPSS (ver. 19). The Pearson test was used to calculate the potential correlation between the variables at a defined significance level of $P < 0.05$.

Table 1. Young's Diagnostic Questionnaire for Internet Addiction (19)

1.	Do you feel preoccupied with the Internet (think about previous online activity or anticipate next online session)?
2.	Do you feel the need to use the Internet with increasing amounts of time to achieve satisfaction?
3.	Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
4.	Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
5.	Do you stay online longer than originally intended?
6.	Have you jeopardized or risked the loss of a significant relationship, job, educational or career opportunity because of the Internet?
7.	Have you lied to family members, therapists, or others to conceal the extent of involvement with the Internet?
8.	Do you use the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety and depression)?

Results

Participants

In this study, 500 individuals participated. The mean age of the high school students was 16.7 ± 0.97 years and their GPA was 18.41 ± 0.7. Among parents, 55% (275) of fathers and 65.8% (329) of mothers were educated up to 12 years, respectively. In addition, the mean internet usage duration was 245.06 ± 212.71. Moreover, 382 (76.4%) participants had a moderate level of socioeconomic status (Table 2).

Univariate analysis

The present study's findings indicated that 162 participants (32.4%) were suffering from IA. Univariate analysis showed that their field of education, parents' education and vocational status, students' average grade score, and duration of Internet usage correlated with IA at $P \leq 0.2$ (Table 3). Other factors did not show any significant association with IA ($P > 0.2$). Moreover, Table 2 shows that those with a self-employed father were most influenced by IA (OR = 4.6), followed by those whose father's job was classified as a corporate employee (OR = 3.1). Moreover, those with mothers who were classified as employees were more affected (OR = 1.9) by IA than those whose mothers were self-employed (OR = 1.2).

Multivariate logistic analysis

Multiple logistic analyses showed that maternal education status ($P = 0.055$) and duration of internet usage ($P < 0.001$) were correlated with IA (Table 4).

Happiness score

The normality of the happiness score was approved, and its P-value was 0.13 (over 0.05). The correlation between happiness score and IA resulted in $r = -0.339$ with $P < 0.001$.

Table 2. The Socioeconomic Status and Demographic Characteristics of the High School Female Students Participated in This Study (N = 500)

Characteristic	N (%)	Characteristic	N (%)	Characteristic	N (%)
Age		Median (Min-Max)	4 (1-10)	Self-employed	241 (48.2)
Mean ± SD	0.97±16.7	Father's Education		Employee	233 (46.6)
Median (Min-Max)	17 (15-18)	Diploma	275 (55)	worker	26 (5.2)
Education year		Associate	66 (13.2)	Mother's job	
10th	201 (40.2)	Bachelor	99 (19.8)	Self-employed	17 (3.4)
11th	144 (28.8)	Master of Science	43 (8.6)	Employee	86 (17.2)
12th	155 (31.0)	PhD	13 (2.6)	worker	169 (33.8)
Education Field		Professional doctorate	4 (0.8)	Homemaker	228 (45.6)
Math	137 (27.4)	Mother's Education		Minutes of Internet use	
Science	166 (33.2)	Diploma	329 (65.8)	Mean ± SD	245.06 ± 212.71
Humanities	197 (39.4)	Associate	53 (10.6)	Median (Min-Max)	180 (1-1200)
Average grade score		Bachelor	86 (17.2)	Socioeconomic Status	
Mean ± SD	7.92 ±18.41	Master of Science	27 (5.4)	Lower than Intermediate	26 (5.2)
Median (Min-Max)	18.37 (5-190.64)	PhD	3 (0.6)	Intermediate	382 (76.4)
Number of family members		Professional doctorate	2 (0.4)	Upper than Intermediate	89 (17.8)
Mean ± SD	1.11 ± 4.46	Father job			

Table 3. Univariate Analysis of the Association between Internet Addiction and Background Characteristics of the High School Female Students (N = 500)

Variables	IA present n(%)/Mean ± SD	IA not present n(%)/Mean ± SD	P-value	OR (CI)
Total observation	162 (32.4)	338 (67.6)		
Field of Education			0.191	
Math	39 (28.5)	98 (71.5)		1.9 (2.1-3.0)
Science	50 (30.1)	116 (69.9)		1.2(1.7-2.4)
Humanities	73 (37.1)	124 (62.9)		Ref
Father's Education			0.057	
Diploma	94 (34.2)	181(65.5)		3.5(3.8-4.9)
Associate	29 (43.9)	37 (56.1)		Ref
Bachelor	23 (23.2)	76 (76.8)		2.2(2.8-3.1)
Master of Science	13 (30.2)	30 (69.8)		1.4(1.9-2.5)
PhD	3 (23.1)	10 (76.9)		2.8(2.9-3.2)
Professional doctorate	0(0). 0	4 (100)		1.9(2.4-3.0)
Mother's Education			0.078	
Diploma	114 (34.7)	215 (65.3)		Ref
Associate	19 (35.8)	34 (64.2)		1.4(1.6-2.3)
Bachelor	26 (30.2)	60 (69.8)		1.9(2.0-2.9)
Master of Science	2 (7.4)	25 (92.6)		2.2(2.9-3.4)
PhD	1 (33.3)	2 (66.7)		2.9(3.0-3.9)
Professional doctorate	0 (0.0)	2 (100)		2.5(2.8-3.8)
Father's job			0.009	
Self-employed	91 (37.8)	150 (62.2)		4.6(2.1-4.9)
Employee	68 (29.2)	165 (70.8)		3.1(1.8-4.1)
worker	3 (11.5)	23(88.5)		Ref
Mother's job			0.002	
Self-employed	6 (35.3)	11(64.7)		1.2(1.0-2.1)
Employee	16 (18.6)	70 (81.4)		1.9(1.5-2.9)
worker	71(42.0)	98 (58.0)		1.6(1.4-2.7)
Homemaker	69 (30.3)	159 (69.7)		Ref
Average grade score	17.35 ± 1.79	18.92 ± 9.52	0.038	
Minutes of Internet use	404.66 ± 237.48	168.56 ± 148.12	< 0.001	

Table 4. Multivariate Logistic Analysis of the Association between Internet Addiction and Background Characteristics of the High School Female Students (N = 500)

Characteristic	IA present N (%) / Mean ± SD	IA not present N (%) / Mean ± SD	O-value	OR
Mother's Education			0.055	
Diploma	114(34.7)	215(65.3)		5.12
Associate	19(35.8)	34(64.2)		2.49
Bachelor	26(30.2)	60(69.8)		1.95
Master of Science	2(7.4)	25(92.6)		1.79
PhD	1(33.3)	2(66.7)		1.43
Professional doctorate	0(0.0)	2(100)		Ref
Minutes of Internet use	404.66 ± 237.48	168.56 ± 148.12	< 0.001	1.007(1.005-1.008)

Discussion

The broad-spectrum accessibility and growth of the Internet and social networking sites used by young adults make it vitally important to explore the possible association between happiness and IA, particularly among students, who are the big users of these communication technologies (23, 24). Due to economic sanctions, on the one hand, and restrictions deliberately imposed by governments on the other hand, the Internet is massively used by young people. To lend further evidence to this claim, the present study results showed that nearly one-third of the high school female students who participated in this study had IA. The happiness score was normal ($P > 0.05$). Nevertheless, the results showed a negative correlation between the happiness score and IA. Multiple logistic analyses showed that maternal education and Internet usage duration were associated with IA.

Internet addiction seems to be a kind of technology addiction or mental disorder resulting in significant behavioral, psychological, and physical consequences (25). It was first defined by Goldberg in 1996, but the term addiction was described several years later in 2004 as "a powerful desire or urge for using the Internet" (26). The internet user population increased to about 3900 million worldwide and 2000 million in Asia in 2017 (27). The rapid increase promises more opportunities for social communication, easier and more efficient access to updated information, and more education opportunities. The excessive and problematic usage of the Internet by some individuals has given rise to the emergence of the hypothesis of IA (9, 28). Young students are more at risk of developing this addiction than older users (29). Previous research extensively deals with the problematic usage of the Internet. They suggest that such a problematic user may spend more time than planned on the Internet, putting their personal relationships at enormous risks (8, 9, 30). Happiness is the right level of emotional intelligence which contributes to a healthy individual growth during one's life (2). It can improve psychosocial well-being and create structural behaviors that contribute to having a healthy lifestyle. While personal happiness has been highly associated with a high level of self-confidence, life satisfaction, and positive feelings of liveliness and energy, IA has been known to directly correlate with a decrease in social adaptation and an increase in depression and anxiety (7, 10, 31, 32).

The findings of our study are consistent with those of Akin *et al.*, who reported that personal happiness had a positive association with vitality, both of which were negatively predicted by IA (33). Similarly, Sharma *et al.* reported that IA negatively correlated with students' psychological well-being significantly (27). Furthermore, in line with the present study results, Ansari *et al.* showed that the IA was not associated with some of the participants' characteristics such as age, private or public school attendance, and socioeconomic status (3). Many other studies have also indicated that higher levels of internet usage or IA are negatively associated with happiness and well-being, consistent with the present study's findings (27, 30). In contrast, Kraut *et al.* reported a positive relationship between Internet usage and well-being (i.e., higher Internet usage correlated positively with better social communication and an improved sense of happiness and well-being) (34). Moreover, multiple logistic analyses of the data collected for the current study showed that the maternal educational status of those who spent more time on the Internet (Internet usage duration) was lower than others who had a greater tendency toward IA; this finding negates the findings of a recent study in Iran (35). It is recommended to explore the relationship between these variables more thoroughly given that the existing evidence suggests reducing Internet addiction to improve happiness and vitality.

Limitation

The present study had the following limitations: First, the sample size was small, and the follow-up period was relatively short. Hence, we suggest more studies in a larger group of patients with a longer period of follow-up to determine the relationship between happiness and IA among high school students. Second, this study was limited by the reported characteristics of the high school girls, which can undermine the effect of IA as a problematic feature compared to high school boys. Third, happiness is a factor affected by many variables and in this study only IA was investigated.

Conclusion

The results indicate a negative correlation between happiness score and IA among female high schoolers in Shiraz. The analyses in this study show that parental educational status and jobs, Internet usage duration, field of education, and GPA are associated with IA ($P \leq 0.2$).

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Conflict of Interest

None.

References

1. Blasco-Belled A, Rogoza R, Torrelles-Nadal C, Alsinet C. Emotional intelligence structure and its relationship with life satisfaction and happiness: New findings from the bifactor

model. Journal of Happiness Studies. 2020 Aug;21(6):2031-49.
2. Bustamante JG, Del Barco BL, Barona EG. Emotional intelligence and happiness in the learning process. Revista de Estilos de Aprendizaje. 2015 Apr 30;8(15).
3. Ansari H, Ansari-Moghaddam A, Mohammadi M, Peyvand M, Amani Z, Arbabisarjou A. Internet addiction and happiness among medical sciences students in southeastern Iran. Health Scope. 2016 May 1;5(2).
4. Chui WH, Wong MY. Gender differences in happiness and life satisfaction among adolescents in Hong Kong: Relationships and self-concept. Social Indicators Research. 2016 Feb;125(3):1035-51.
5. Lee CS, Shin MH, Myoung HR, Choi K, Jang HY. The Influence of Adolescent's Domestic Abuse Experience on Happiness: Dual Mediated Effect of Peer Relationship and Violence Experience. International Journal of Pure and Applied Mathematics. 2018 Feb;118(24).
6. Eckhaus E, Sheaffer Z. Happiness enrichment and sustainable happiness. Appl Res Qual Life. 2019;14(4):1079-97.
7. Tomlinson R, Keyfitz L, Rawana J, Lumley M. Unique contributions of positive schemas for understanding child and adolescent life satisfaction and happiness. J Happiness Stud. 2017;18(5):1255-74.
8. Chebbi P, Koong KS, Liu L, Rottman R. Some observations on internet addiction disorder research. J Inf Syst Edu. 2020;11(3):3-10.
9. Baturay MH, Toker S. Internet addiction among college students: Some causes and effects. Educ Inf Technol. 2019;24(5):2863-85.
10. Saikia AM, Das J, Barman P, Bharali MD. Internet Addiction and its Relationships with Depression, Anxiety, and Stress in Urban Adolescents of Kamrup District, Assam. J Family Community Med. 2019;26(2):108-12.
11. Alimoradi Z, Lin CY, Broström A, Bülow PH, Bajalan Z, Griffiths MD, et al. Internet addiction and sleep problems: A systematic review and meta-analysis. Sleep Med Rev. 2019;47:51-61.
12. Zhang MWB, Tran BX, Huong LT, Hinh ND, Nguyen HLT, Tho TD, et al. Internet addiction and sleep quality among Vietnamese youths. Asian J Psychiatr. 2017;28:15-20.
13. Hussain Z, Pontes HM. Personality, internet addiction, and other technological addictions: An update of the research literature. InMultifaceted approach to digital addiction and its treatment 2019 (pp. 46-72). IGI Global.
14. Hawi N, Samaha M. Identifying commonalities and differences in personality characteristics of Internet and social media addiction profiles: traits, self-esteem, and self-construal. Behav Inf Technol. 2019;38(2):110-9.
15. Kollamparambil U. Happiness, happiness inequality and income dynamics in South Africa. J Happiness Stud. 2020;21(1):201-22.
16. Tran TQ, Nguyen CV, Van Vu H. Does economic inequality affect the quality of life of older people in rural Vietnam. Journal of Happiness Studies. 2018 Mar;19(3):781-99.
17. Bedin LM, Sarriera JC. A comparative study of the subjective well-being of parents and adolescents considering gender, age and social class. Social Indicators Research. 2015 Jan;120(1):79-95.
18. Young KS. Internet addiction: The emergence of a new clinical disorder. Cyberpsycholoy & Behavior, 1, 237-244.
19. Mohammadsalehi N, Mohammadbeigi A, Jadidi R, Anbari Z, Ghaderi E, Akbari M. Psychometric Properties of the Persian Language Version of Yang Internet Addiction Questionnaire: An Explanatory Factor Analysis. Int J High Risk Behav Addict. 2015;4(3):e21560.
20. Hills P, Argyle M. The Oxford Happiness Questionnaire: a compact scale for the measurement of psychological well-being. Pers Individ Dif. 2002;33(7):1073-82.
21. Alipour A, Heris MA. Reliability and validity of the oxford happiness inventory among iranians. Journal of Iranian Psychologists. 2007 Jan;3:287–298
22. Liaghatdar MJ, Jafari E, Abedi MR, Samiee F. Reliability and validity of the Oxford Happiness Inventory among university students in Iran. Span J Psychol. 2008;11(1):310-3.
23. Ridout B, Campbell A. The Use of Social Networking Sites in Mental Health Interventions for Young People: Systematic Review. J Med Internet Res. 2018;20(12):e12244.
24. Dogan U, Kaya S. Mediation effects of Internet addiction on shame and social networking. Universal Journal of Educational Research. 2016;4(5):1037-42.
25. Dai Q. Gender, grade and personality differences in internet addiction and positive psychological health among Chinese college students. Primary Health Care. 2016;6(248):2167-1079.
26. Goldberg I. Internet Addiction Disorder. Retrieved November 24, 2004. 1996.
27. Sharma A, Sharma R. Internet addiction and psychological well-being among college students: A cross-sectional study from Central India. J Family Med Prim Care. 2018;7(1):147-51.
28. Barbosa Neves B, Fonseca JRS, Amaro F, Pasqualotti A. Social capital and Internet use in an age-comparative perspective with a focus on later life. PLoS One. 2018;13(2):e0192119.
29. Abd El-Kader RG, Hanson VF. Internet usage and its addiction level among students in a selected college in Ras Al Khaimah Emirate: A cross-sectional study. International Journal of Studies in Nursing. 2019 Apr 15;4(2):7.
30. Smahel D, Brown BB, Blinka L. Associations between online friendship and Internet addiction among adolescents and emerging adults. Dev Psychol. 2012;48(2):381-8.
31. Fumero A, Marrero RJ, Voltes D, Penate W. Personal and social factors involved in internet addiction among adolescents: A meta-analysis.

Computers in Human Behavior. 2018 Sep 1;86:387-400.
32. Grover S, Sahoo S, Bhalla A, Avasthi A. Problematic internet use and its correlates among resident doctors of a tertiary care hospital of North India: A cross-sectional study. Asian Journal of Psychiatry. 2019 Jan 1;39:42-7.
33. Akın A. The relationships between Internet addiction, subjective vitality, and subjective happiness. Cyberpsychology, Behavior, and Social Networking. 2012 Aug 1;15(8):404-10.
34. Kraut R, Kiesler S, Boneva B, Cummings J, Helgeson V, Crawford A. Internet paradox revisited. Journal of social issues. 2002 Jan;58(1):49-74.
35. Dargahi H, Razavi SM. Internet addiction and its related factors: A study of an Iranian population. Payesh (Health Monitor). 2007 Jun 15;6(3):0-0.