The Relationship between Mobile Cellphone Dependency, Mental Health and Academic Achievement

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Abstract Introduction and background: investigating mobile cellphone addiction among students regarding to increasing mobile use among them is necessary. We should examine vary psychological and academic aspects. Therefore, this study aimed to investigate the relationship between Mobile cellphone dependency, mental health and academic achievement in students. Materials and Methods: The outline of this research in terms of data collection methods are descriptive and correlational studies. The population in this study consisted of all male and female high school students in Kermanshah in 2014-2015 school year. 340 students (182 females and 158 males) were selected by simple random sampling and questionnaire responded dependence 8on mobile phone and a list of 25 symptoms. The mean scores for the second term were considered as an indicator of academic achievement. For data analysis, Pearson correlation and stepwise regression were used. Results: The results showed that the mobile dependence and have a significant relationship deprivation tolerance, life dysfunction, compulsion-persistence and mental health with academic achievement. Multiple regression analysis showed that the components of the life dysfunction, compulsion-persistence, and deprivation tolerance predicted 23.9% of changes in academic achievement. Also, life dysfunction, compulsion-persistence, and deprivation tolerance predicted 20.1% of mental health changes. Conclusion: Students who are more dependent on mobile experience more psychopathology, academic failure in their lifetime.

Keywords: addiction to mobile, academic achievement, mental health

1. Introduction

Academic achievement is an important index for education assessment. The main goal of this system is reaching this aim. On the other hand, society and specially education system are interested in destination, successfully development and accomplishment, and person's status in society. They anticipate that everyone reach his optimum progress in cognitive dimensions and acquisition of skills, and also have progress in personality, affective and behavioral aspects [1]. Looking schools and their constructions it is clear that despite of little differences in construction and shape of schools and similarity in education items, there is many differences in school function, level of education and student outcomes. Therefore, despite similar conditions in schools and even in a school (and class), the students are different and these differences may be due to the impact of communication technology on students.

Information and communication technology has many benefits and services for humanbeings, but its negative impact on the community increases daily. One of these aspects is dependency or addiction to these technologies. Addictive use of mobile cellphones is one of the factors influencing student achievement [2]. Panahi and colleagues [3] in a study on high school students stated that dependence on mobile phone causes decrease in academic achievement and low emotional communication with families in teenagers. Increased use of communication devices such as mobile phones, especially among young people are related with mental health problems such as depression and sleep problems [4]. The results of Azi (2009) showed that there is a significant positive correlation between the harmful use of mobile phones and neuroticism [5]. Yassami Nejad, golmohammadian and Yousefi [6] in a study titled at the general health and excessive use of mobile in students suggested that there is a significant positive relationship between the public health and excessive use of mobile phones. Also, studies have shown that there is a relationship between harmful use of mobile phone and aggression, smoking, suicidal tendencies, low self-esteem and academic failure in both genders [7,8]. Azuki study [9] showed that young people who extremely and addictive uses of mobile texting have

high levels of impulsivity, feelings of loneliness and social anxiety. Atadokht, Hamidifar and Mohammadi [10] in a study concluded that harmful use of mobile phones in student has significant negative relationship with academic performance and progress motivation. Ghanbari [2] in a study on high school students suggested that there is a relationship between mobile addiction, and sleep disorders and poor academic progress. Also students who have mobile addiction significantly have lower sleep quality and academic achievement than normal people. Khazaei, Saadatjoo, Shabani, Sanobarai and Baziyan [7] conducted a study among students and stated that there is a significant relationship between mobile use and self-esteem, so students who have lower self-esteem are higher in mobile dependence. Beh-Sakoo (2008) in a study reported that people who suffer from anxiety, use mobile addictive and excessive [2]. Babadi Akasheh, Zamani, Abedini, Akbari and Hedayati [11] in a study concluded that there is a significant negative correlation between mental health and addiction levels of mobile use (habitual, dependent, addictive and involuntary behaviors). In total, several researches have shown that there is a significant relationship between the dependence on mobile phone and aggression [5], more anxiety [12], unhealthy lifestyle, type a behaviors, and depression [13], quality of lifestyle, extraversion and neuroticism [14], impulsivity [15], an unhealthy lifestyle [16] and varying levels of depression [17].

The findings of some studies emphasized on positive effects of mobile cellphone use. Camer and Oganda [18] showed that students who had mobile cellphone education had higher progress and development rather than other students. Also, i n a study, Naderi, Ayati, Zare Bidaki and Akbari Boorang, [19] showed thateducation throgh mobile cellphone has positive effect on metacognitive self—regulation and attitude in students.

Today, most students use cell phones and increased employment of this device may result in mental health problems and poor academic performance experience that predisposing social ills, crime, repeat grades, and the expulsion of school. So further studies are necessary in this context, therefore this study aimed to investigate the relationship between mobile cellphone dependency, mental health and academic achievement in high school students of Kermanshah city.

2. Method, Statistical Population and Sample

This research design due to data collection is descriptive and correlational studies. The population in this study consisted of all male and female high school students in Kermanshah were studied in 2015-2014 school year. In this study, sampling method was simple random sampling. The sample size selected taking into account the criteria table Morgan sampling and taking into consideration the estimated number of population, 360 persons were considered, but due to the confounding of 20 questionnaires, the sample size of 340 patients (182 females and 158 males) was reduced. To analyze the data,

Pearson correlation coefficient and stepwise regression were used.

3. Tools and Materials

A) Symptom Cheklist-25 (SCL25): This scale is a short form of the revised version of the SCL-90-R which is prepared by Najarian and Davoodi [20]. This scale is a self-report instrument to measure general psychopathology and includes 25 items that each question scores on a continuum from 1 (none) to 5 (for the most part). In the study of Najarian and Davoodi [20] retest reliability coefficients for SCL-25 was 0.78 and internal consistency reported 0.97. They also reported validity of this test ranged 0.49 to 0.69. The lower scores on this scale is a sign of better mental health and higher scores means having mental health symptoms (impairment) in person.

B) Academic Progress Scale: The academic progress in this study was the mean of second term exame scores of students.

C) Dependence on mobile phone Inventory (Hyun Young Koo2009): This questionnaire contains 20 questions that include three areas of dependence on the mobile phone: deprivation tolerance (7 items), life dysfunction (6 items) and compulsion- persistence (7 items). Each question, contain four answer options including: very high, high, low and very low rates and phone users are classified in three group of: heavy users, average users and mobile addicted. The score equal to 70 or greater means to addiction, 63-70, score shows heavy use and less than 63 was considered moderate use [21] In Khazayi et al [5] study, Cronbach's alpha coefficient to determine the reliability reported 0.92.

4. Results

Table 1 shows the mean and standard deviation of the studied variables in students.

Table 1. mean and standard deviation of the studied variables in students

variables	girl		boy		total	
	M	SD	M	SD	M	SD
deprivation tolerance	18.20	3.18	19.35	3.32	18.74	3.29
life dysfunction	16.12	2.93	16.35	3.40	16.23	3.16
compulsion- persistence	19.03	3.13	19.49	3.20	19.24	3.17
Dependence on mobile	53.34	6.87	55.20	7.24	54.21	7.10
Academic achievement	15.68	1.61	15.75	1.70	15.71	1.65
Mental health	46.31	6.75	48.56	7.52	47.36	7.19

According to Table 1, the average score for male students in mental health (psychopathology) dependence on mobile and components of deprivation tolerance, life dysfunction and compulsion- persistence is higher than female students mean score of girl students in academic achievement is higher than boy students.

Table 2 shows the correlation matrix between the mobile dependence and academic achievements of students.

Table 2. correlation matrix between the mobile dependence and academic achievement

variables	deprivation tolerance	life dysfunction	compulsion- persistence	Dependence on mobile
Academic achievement	-0.290	-0.435	-0.322	-0.472
P	0.001	0.001	0.001	0.001

According to Table 2 there is a significant negative relationship between the mobile dependence and components of deprivation tolerance, life dysfunction and compulsion- persistence. The results indicate that as mobile dependence increasing, academic achievement reduces and vice versa.

Table 3 shows Stepwise regression analysis of mobile dependence component and academic progress.

Table 3. Regression analysis of the mobile dependence component with academic achievement

Model	R	R2	R2 Change	F	P	B	β	t	P
1	0.435	0.190	0.190	79.07	0.001	-0.228	-0.435	-8.89	0.001
2	0.474	0.225	0.035	48.83	0.001	-0.103	-0.199	-3.90	0.001
3	0.488	0.239	0.014	35.09	0.001	-0.064	-0.128	-2.48	0.001

Based on the results shown in Table 3, observed F in academic achievement variable is significant and 23.9 percent of the total amount of variable coefficient of criterion variable, the first step regression analysis and predictive models 1, life dysfunction variable entered in the equation and explained 0.19% of the variance of criterion variable with beta coefficient 0.435. The second step regression analysis and model 2, the predictor variable, compulsion-persistence entered in the equation and explained 3.5% of the variance criterion with beta coefficient 0.199. Then the third step and model 3 deprivation tolerance variables were added to and explained 1.4% of academic achievement with beta coefficient 0.128.

Table 4 shows the correlation matrix between the mobile dependency and mental health of students.

Table 4. Correlation matrix between the mobile dependency and mental health

variables	deprivation tolerance	life dysfunction	compulsion- persistence	Dependence on mobile
Mental health	0.388	0.303	0.178	0.439
P	0.001	0.001	0.001	0.001

According to Table 4, there is a significant negative relationship between the dependence on Mobile and components of deprivation tolerance, life dysfunction and compulsion- persistence with mental health. As low scores indicating better mental health in mental health questionnaire, the results suggest that increased dependence on mobile phones is associated with increased psychopathology. So with the increasing of dependence on mobile, psychopathology increases and vice versa.

Table 5 shows Stepwise regression analysis of mobile dependence components with mental health.

Table 5. Regression analysis of mobile dependency component with mental health

Model	R	R2	R2 Change	F	P	B	β	t	P
1	0.388	0.150	0.150	59.73	0.001	0.848	0.388	7.73	0.001
2	0.427	0.183	0.033	37.67	0.001	0.438	0.192	3.66	0.001
3	0.449	0.201	0.018	28.21	0.001	0.333	0.147	2.78	0.006

Based on the results shown in Table 5, observed F in mental health variable is significant and 20.1 percent of the total amount of variable coefficient of criterion variable, the first step regression analysis and predictive models 1, deprivation tolerance variable entered in the equation and explained 15.0% of the variance of criterion variable with beta coefficient 0.388. The second step regression analysis and model 2, the predictor variable, life dysfunction entered in the equation and explained 3.3% of the variance of criterion variable with beta coefficient 0.192 Then the third step and model 3 compulsion-persistence variable were added to and explained 1.8% of mental health with beta coefficient 0.147.

5. Discussion

Mobile phone use is associated with many threats and opportunities which their understanding and acculturation is necessary to increase opportunities and reduce the threats for user that are mostly young. So, it's a primary need for researchers and cultural authorities [5]. Accordingly, the present study aimed to investigate the relationship between mobile cellphone dependency, mental health and academic achievement in high school students of Kermanshah city. The results showed that the Mobile dependence and components of deprivation tolerance, life dysfunction and compulsion-persistence have a significant negative correlation with academic achievement and life dysfunction, compulsion-persistence and deprivation tolerance could predict and explain 23.9% of academic progress. These results indicate that with the increasing of dependence on mobile, academic achievement reduced and vice versa. The result also showed that there is a significant positive relationship between dependence on mobile with deprivation tolerance, life dysfunction, compulsion-persistence and mental health, and deprivation tolerance, life dysfunction and compulsion-persistence could predict and explain 20.1% of mental health changes. As low scores indicating better mental health in mental health questionnaire, the results suggest that increased dependence on mobile phones is associated with increased psychopathology and with the increasing of dependence on mobile, psychopathology increases and vice versa.

The findings are to some extent is aligned with the results of the Ghanbari [2], Panahi and colleagues [3], Pederson [4], Khazaei and colleagues [5] Yassami Nejad and colleagues [6], Khazaei and colleagues [7], Motaharo and colleagues [8], Atadokht and colleagues [10], Babadi Akasheh and colleagues [11], Pourakbaran [12], Toda and azoy [13], azoy [14], Biloxes and colleagues [15], Toda and colleagues [16] and Kagan et al [17] studies.

Addiction to mobile phone use is an impulsive behavior which its application not only have a sense of relief for person but also gradually needs to more use due to achieve former sense of relief. In case of exclusion, isolation will be occurring. The mobile addicted users away from their friends and family are isolationist, repress age, and social priorities such as education and employment, when the phone is not available to them thin to it and suffer from its away [2]. The findings suggest that excessive use of mobile phones, related to other behavioral patterns such as employment and stay awake at night to exchange SMS messages and also emotional dependence that is created in the mind of users. As these people believe that without the use of mobile phones are not able to live. These findings support the negative impact of excessive use of mobile phone and its negative effect on physical and psychological [21]. In explaining the findings of this study it can be said that addictive Students have more mental occupation which leads to attention deficit and loss of focus in classroom and finally lead to academic reduction, decrease in mental health and increase in stress, anxiety and loneliness.

In theoretical level, the findings of this study can help the development of knowledge in this field and background for further research in the field of mobile addiction and its impact on academic achievement and mental health of students. The practical effect of addiction to mobile with respect to verification of academic failure rates and a greater incidence of trauma need to identify and mitigate any adverse effects of addiction to mobile more revealing. The limitations of the present study follows: limitation of research to high school students in Kermanshah which limit generalizability of the findings and must be handled with care. Lack of cooperation from some students and officials in the performance of research, use of pencil- paper tests and limitations of use of in-depth interview methods. Regarding to the above-mentioned restrictions and the final results of this study, we suggest that future research projects, such researches be done in other cities, and, if possible, be done on a larger volume of students, also we suggest that the relationship between variables, such as hardiness, coping styles strategies and emotion regulation, loneliness and shyness be considered with mobile addiction.

Acknowledgements

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