

Patterns of Internet Use among Saudi Public Adults: A Cross Sectional Study

Eman Dawood[1, 2]*, Rufa Mitsu[1] & Agnes Monica[1]
1. Psychiatric and Mental Health Nursing, College of Nursing, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Kingdom of Saudi Arabia.
2. Psychiatric Mental Health Nursing Department, College of Nursing, Menofyia University, Shebin El-Kom, Egypt.
Corresponding Author: Eman Dawood, Assistant Professor PhD, MNSc, B.Sc.N, RN
College of Nursing - Riyadh (MC: 3105) King Saud bin Abdulaziz University for Health Sciences
P.O. Box 3660 Riyadh 11481 Kingdom of Saudi Arabia
*E-mail address: dawoode@ksau-hs.edu.sa

Abstract
Background: Internet has emerged as an integral part of most people's daily lives globally. Current research indicated that some internet users worldwide experience personal and professional tribulations due to the time they spent online. **Objectives:** The aim of this study was to examine patterns of internet use among Saudi adults in central region of Kingdom of Saudi Arabia. **Methods:** A descriptive correlation, cross – sectional research design was utilized to conduct the current study on a convenience sample of 678 adults who were recruited from public areas of highest community assembly points such as shopping malls, parks, outpatient clinics waiting areas high schools, colleges and universities and gave voluntary consent to participate in the study. Participants were asked to complete the two part questionnaire survey including participant's demographic background and Internet Addiction Test (IAT) Young (1998). An explanation about the purpose and the nature of the study was offered for each individual potential participant. Subjects were assured about the confidentiality of the collected data and that it will be only used by the researcher for the purpose of the current study. Data were analyzed using SPSS version 18. **Results:** Average daily internet use among participants ranged between 30 minutes to 24 hours per day (M = 7.03, SD± 4.97). Hundred percent of the participants reported that they have internet access at home while 70.8% have internet access at work and 61.7% of the participants had mobile internet access all time. More than 50% of the participants reported that they often lose sleep due to late-night log-ins or found themselves saying "just a few more minutes" when on-line. Internet use among Saudi participants included in the current study didn't negatively impact their grades or school works because of the amount of time they spend on-line (less than 25% of the study participants). Majority of the participants didn't try to hide how long they've been on-line (more than 75%), and more than 50% of the participants didn't use the internet to form new relationships with fellow on-line users. **Conclusion:** Although the identified percentage of Saudi adult participants fitting to the category of internet addiction is very low but still the results show that major percentage of participants had occasional problems which can be considered as a bridge to internet addiction. Accordingly there is a need to gain insight into the problem and develop and expand awareness about the harmful consequences of maladaptive internet use through interactive programs and mass media.
Keywords: internet addiction, pathological internet use, problematic internet use, maladaptive internet use

Introduction

The Internet has revolutionized the way people communicate, work, shop, and gain access to entertainment. While it provides handiness and adds values to people's lives, there are many cons to the Internet. Over use of the Internet can result in neglecting family, career, or academic work (Turel, Serenko, & Bontis, 2011 and Turel, Serenko & Giles, 2011). The expediency and diversity of Internet has progressively become the focus of modern life as it has become one of the foremost necessities of life in almost all countries. Being a rich source of data, and comprising entertainment facilities for all age groups, as well as its easy access are among most important reasons of increasing use of the World Wide Web. In spite of numerous advantages of this technology, in the case of being misused, it can be risky and lead to Internet addiction. This issue is so important that pathological Internet use or Internet addiction has been well-thought-out as one of the epidemics of 21st century.

Recently, considering mental health, the Internet addiction is being deliberated as a severe threat and a variety of negative psychosocial consequences results due to the misuse of the Internet. A number of consequences and bio psychosocial symptoms are experienced by the internet addicts which are proved by clinical evidence. These comprise symptoms habitually linked with substance-related addictions, specifically tolerance, mood alteration, salience, withdrawal symptoms, relapse, and conflict (Beutel, Hoch, Woelfing, and Mueller, 2011). The assorted spectrum of internet addiction include Internet activities that have possible illness value, like shopping,

gambling, and social networking, furthermore gaming signifies a portion of the hypothesized construct of gaming addiction and currently seems to be the most extensively considered particular form of Internet addiction (Griffiths, 2005).

Adolescent Internet addiction varies widely internationally. Global prevalence rates for Internet addiction range from 1.5% to 8.2% (Petersen, Schelb, Thiel, Weymann, & Thomasius, 2009). The prevalence in Europe ranges between 1% and 9%. In Asia the prevalence has been testified to be between 2% and 18% and the prevalence in the Middle East was found to range between 1% and 12%. Still, these data need to be interpreted through specific caution, since the contradictory reports as well as the varying scales with questionable validity makes it difficult for accurate estimation (Christakis, Moreno, Jelenchick, Myaing, and Zhou, 2011).

The Mental health professionals suggested considering Internet addiction as a mental disorder in their recent edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-5, 2013). It has been recognized by American Psychiatric Association to take account of Internet Addiction disorder rendering worthy of supplementary scientific investigation (APA, 2013).

At present, internet addiction is proposed as a disorder in need of further study for the appendix of the Diagnostic and Statistical Manual, fifth edition (DSM-5, 2013). Essentially, internet use turn out to be pathological when it interferes with one or more main aspects of life functioning such as profession, significant relationships, school, physical health or mental health.

As an essential to the diagnosis of Internet Addiction Disorder for DSM-5 inclusion (Block, 2008), Four components were originally suggested: (1) extreme Internet use, often related with losing the knowledge of time and a negligence in basic drives; (2) The withdrawal that includes tension, feeling angry and/or feel depressed while the computer is inaccessible; (3) The need for improved computer tools, additional hours of use or additional software which is referred as tolerance and (4) The adverse consequences which includes social isolation, lying, poor school, arguments, fatigue and professional achievement. A major survey was piloted to evaluate its validity and reliability and to improve the Internet Addiction Disorder's diagnostic criteria in the general population (Tao, et al., 2010). The diagnostic criteria consisted of a clinically significant deficiency criterion (psychosocial and functional deficiencies), a course criterion (period of addiction that lasts for a period of minimum 3 months and with not less than 6 hours of nonessential Internet usage per day), a symptom criterion (The clinical symptoms of Internet Addiction Disorder), and also with an exclusion criterion (exclusion of dependency endorsed to psychotic disorders). Internet Addiction Disorder was initially proposed for inclusion in the 2013 DSM-5 but was not recognized as a disorder; however, Internet Gaming Disorder was included in the DSM-5 appendix of disorders for further study (Weinstein, et al., 2014).

Numerous factors can contribute to Internet addiction. They include expanding social networks, coping with stress, coping with developmental challenges, exhibiting greater control and social anxiety, and creating a virtual "ideal self " and escapism ((Kuss & Griffiths 2011 and Lee & Stapinski 2012). Novelty seeking, high harm avoidance, reward dependence, low cooperativeness, and low self-directedness were reported in South Korean study by Ha et al. (2007). Personality factors such as psychoticism, lack of perseverance and neuroticism, sensation seeking, and aggressiveness have been found to be associated with Internet addiction, in addition Internet addiction found to be associated with interpersonal factors such as perceived discontentment with peer interactions and problems with parenting attitudes, family cohesion, family communication, and family violence (Park et al., 2008). It is probable that people become depressed and develop lonely as the result of being deprived from face-to-face interaction. It is unclear if loneliness, depression, or low self-esteem turns people to avoid human contact and drives them to interaction intervened by an electronic device. Likewise, it is possible that people with definite personality traits and preferences are driven to excessive use of the Internet and the addiction results in enhancing the personality traits and preferences that causes a venomous cycle. The multiple regression models by Cheung and Wong (2011) shows the Internet addiction as a cause for insomnia and depression. Internet Addiction Disorder has been associated with low self-esteem, few social friends, poor relationship with teachers and students, family dissatisfaction and recent stressful events and conflicting family relationships are the additional psychosocial factors noted in the literature (Weinstein et al. 2014)

There are contradictory evidences related to the cognitive factors associated with Internet Addiction as Sun et al. (2009) found that Internet Addiction Disorder was associated with deficits in reward-based decision making, while (Ko et al., 2010) found that participants had no impairments in reward-based decision making, but those with Internet Addiction Disorder had higher novelty-seeking characteristics.

Sleep deprivation or disturbance is the commonly recognized health threats of Internet addiction. In South Korea, Internet addiction among high school students showed high prevalence of excessive daytime sleepiness, compared to non addicts. The prevalence of witnessed apnea, insomnia, snoring, nightmares and teeth grinding was also found to be higher in Internet addicts while comparing with possible non addicts (Choi et al., 2009).

An association between continued Internet use and psychotic-like experiences was described by Mittal, Dean and Pelletier (2012). Studies propose that Internet Addiction is often related to psychiatric disorders. It is still unclear that Internet Addiction should be considered as a primary or as a secondary addictive disorder owing to other psychiatric disorders. The existence of psychiatric co-morbidities might have supplementary effect on treatment outcome and psychosocial functioning for Internet Addiction. Substance abuse, mood disorders, attention-deficit hyperactivity disorder (ADHD) and anxiety disorders are widely found among the most common co morbidities.

Gender differences in users are suggested through the research related to problematic internet behavior in college and university students. Cam & Isbulan (2012) conducted a study in a Turkish teacher preparation institution and found that female students are less dependent on Facebook than male students. Another study in Turkey found that females have significantly less Internet addiction tendencies compared to male (Şahin & Kırşehir, 2011). However, Oktuğ (2010) found the mean score to be lower in men than women on the Internet addictions scale.

There is growing evidence that internet addiction is a behavioral addiction, yet the pathophysiological mechanisms behind internet addictions remain under research. Given the fact that the internet is woven into the fabric of the lives of the current generation, and the researchers concern about the potential for internet addiction seem justified that require a systematic estimation of the scope of the problem and its consequences among different populations mainly among adult in both genders.

Currently there are neither accurate statistics nor published researches available on patterns of internet use among Saudi public adults which raise an urgent need to conduct research studies on patterns of internet use among different Saudi populations on different Saudi settings in order to gain an insight in to that global growing concern.

Aim of the Study

The aim of this study was to examine patterns of internet use among Saudi adults in central region of the Kingdom of Saudi Arabia.

Subjects and Methods

Research Design

A descriptive correlation cross section research design was utilized to conduct this study with the aim to assess patterns of internet use among Saudi adults in central region of Kingdom of Saudi Arabia

Setting

Participants were recruited from public areas of highest community assembly points such as shopping malls, parks, outpatient clinics waiting areas high schools, colleges and universities.

Participants

A non – probability convenience sample of 678 Saudi adults were invited and agreed to participate in the study and completed the study survey.

Data Collection Instruments

Data were collected using a two part questionnaire. First part concerned with the participant's demographic background as gender, age, level of education, occupation and how many hours does each participant spend on the internet per day in addition to availability of internet access at home, work and mobile internet access.

Second part of the questionnaire included the self-report 20 statements translated version of the Internet Addiction Test (IAT) Young (1998), which was used in this study as a measure of the primary outcome variable of the current study, patterns of internet use. The IAT is a 20-item instrument that measures internet addiction using a 5-point Likert scale that ranges from (1= rarely, 2 = occasionally, 3= frequently, 4= often and 5=

always). Total possible scale score range from 20-80 with scores of 20-49 represent "average user", scores of 50-79 represent "occasional problems" and scores 80-100 are classified as "addicted". Young Internet Addiction Test is one of the most validated and widely used scales for evaluation of internet addictions globally with many translated versions

The Internet Addiction Test was translated from English to Arabic by the researchers; face validity was performed using back translation from Arabic to English by a bilingual translator who was blind to the original English version of the questionnaire.

Test retest method was used to determine the reliability of the Arabic version of the Internet Addiction Test, by applying the translated questionnaire twice on 20 subjects who were excluded from the study. In the current study, Cronbach's Alpha was calculated to be 0.916. Subjects needed 8-12 minutes to complete the questionnaire. A pilot study was conducted to test the feasibility and applicability of the tool. The pilot study was carried out on ten subjects who were excluded from the study. The result of the pilot study helped in refining the translation of some questions.

Ethical Considerations

An official approval to conduct the study was obtained from the ethical committee of the research unit at College of Nursing – Riyadh affiliated to King Saud bin Abdulaziz University for Health Sciences. Informed written consent was obtained from the participants who agreed to participate in the study. Anonymity was ensured by using identification codes on the questionnaires. No identifying information about the participants was collected. It was clearly stated that participation is voluntary and confidential and that the responses will only be used for the purposes of the current study, in addition, participants were assured about their right to withdraw from the study at any time.

Data Collection

Participants who gave consent to participate in the study were individually interviewed and data were collected over a three month period (October 2014 and January 2015). Data were collected from various settings in order to represent different sociodemographic characteristics of Saudi adult population including shopping malls, parks, outpatient clinics waiting areas, high schools, colleges and universities.

Data Analysis

Data were coded, entered and analyzed using Statistical Package of Social Studies (SPSS) version 18.0. Data was presented using descriptive statistics in the form of frequencies and percentages. Interval and ratio variables were presented in the form of means and standard deviations. Between group sociodemographic and patterns of internet use, differences were analyzed using non probability Chi Square test ($\chi 2$). Pearson r was used to test correlation and independent samples t test was used to compare between male and female participants mean IAT categories scores. The significance level was chosen as ($p<0.05$).

Results

Data were collected from various public settings with the aim to assess the patterns of internet use among Saudi public adults in central region of Saudi Arabia. The sample consisted of 678 Saudi adults. 272 (40.1%) were male and 406 (59.9%) were female. Participants' age ranged from 18 to 58 years with a mean age of 24.42 year (SD + 7.044). Majority of the study participants were single 481, (70.9%) followed by married 181 (26.7%) and only 16 (2.4%) were divorced. More than half of the participants 368 (54.3%) held a bachelor degree and 202 (29.8%) had a high school education. More than half of the participants in the study 432 (63.7%) were students, while 172 (25.4%) were working and 59 (8.7%) were not working and six participants (0.9%) were retired.

Average daily internet use among participants ranged between 30 minutes to 24 hours per day with a mean daily internet use of 7.03 hours (SD+ 4.97). Although, independent samples t test revealed no statistically significant difference between male and females in the daily internet use (t= -0.697, p= 0.486), females spent more time daily on the internet (M = 7.14 + 5.01) than male participants did (M = 6.87 + 4.91).

Hundred percent of the study participants reported that they have internet access at home while 70.8% have internet access at work and 61.7% of the participants had mobile internet access all time wherever they go.

Table 1: Sociodemographic Data of the Participants (n = 678)

Variable	Frequency (N)	Percent (%)
Gender		
Male	272	40.1
Female	406	59.9
Marital Status		
Single	481	70.9
Married	181	26.7
Divorced	16	2.4
Education		
Quran Karim	6	0.9
Elementary education	13	1.9
Preparatory School	21	3.1
High school	202	29.8
Diploma degree	49	7.2
Bachelor degree	368	54.3
Master degree	16	2.4
PhD or equivalent	3	0.4
Occupation		
Student	432	63.7
Working	181	26.7
Not working	59	8.7
Retired	6	0.9
Do you have internet access at home?		
No	0	0
Yes	678	100
Do you have internet access at work?		
No	198	29.2
Yes	480	70.9
Do you have mobile internet access?		
No	260	38.3
Yes	418	61.7

Analysis of data revealed only statistically significant difference between male and female participants in relation to having internet access at home (X2 = 4.974, p = 0.02). Male and female groups were comparable in relation to having an internet access at work (X2 = 0.026, p = 0.78) and having mobile internet access (X2 = 2.100, p = 0.094).

Table 2: Difference between Male and Female Participants in relation to Internet Access (n = 678)

Statement	Male (n, %)	Female (n, %)	X^2	P
Do you have internet access at home?				
No	17 (5.4)	5 (1.6)	4.974	0.020
Yes	155 (49.1)	139 (44)		
Do you have internet access at work?				
No	10 (3.2)	9 (2.8)	0.026	0.78
Yes	162 (51.3)	135 (42.7)		
Do you have mobile internet access?				
No	44 (13.9)	27 (8.5)		
Yes	128 (40.5)	117 (37)	2.100	0.094

As presented in table 3, in exploration of the participants' responses to the internet addiction test, the most highly reported statement was that statement indicating participant's fear that life without the Internet would be boring, empty, and joyless as more than 60% of the Saudi adults rated this statement between frequently and always. The second highly ranked statement was that participants found that they stay on-line longer than they intended as around three quarters of the participants ranked that statement between frequently and always. More than 50% of the participants reported that they often lose sleep due to late-night log-ins or found themselves saying "just a few more minutes" when on-line.

Interestingly, internet use among Saudi adult participants included in the current study didn't negatively impact their grades or school works because of the amount of time they spend on-line (less than 25% of the study

participants). Majority of the participants didn't try to hide how long they've been on-line (more than 75%), and more than 50% of the participants didn't use the internet to form new relationships with fellow on-line users.

Table 3: Summary Percentage of Individual Item Response Rates for IAT among Saudi Adults (n = 678)

Statement	Rarely	Occasionally	Frequently	Often	Always
1. How often do you find that you stay on-line longer than you intended?	11.2	18.1	23.2	22	25.5
2. How often do you neglect household chores to spend more time on-line?	19.5	32.6	20.6	15.9	11.4
3. How often do you prefer the excitement of the Internet to intimacy with your partner?	29.2	34.1	19.5	10.3	6.9
4. How often do you form new relationships with fellow on-line users?	50.1	22.1	15.3	7.2	5.2
5. How often do others in your life complain to you about the amount of time you spend on-line?	30.8	34.5	16.1	11.2	7.4
6. How often do your grades or school works suffer because of the amount of time you spend on-line?	45.9	27.9	12.5	7.8	5.9
7. How often do you check your e-mail before something else that you need to do?	37.6	26.1	18.1	10.2	8.0
8. How often does your job performance or productivity suffer because of the Internet?	43.4	33.3	10.9	8.4	3.9
9. How often do you become defensive or secretive when anyone asks you what you do on-line?	37.2	31.1	15.8	7.4	8.5
10. How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?	17.7	26.7	24.0	15.9	15.6
11. How often do you find yourself anticipating when you will go on-line again?	17.8	27.3	25.5	12.4	16.9
12. How often do you fear that life without the Internet would be boring, empty, and joyless?	16.4	22.7	22.0	10.8	28.1
13. How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?	33.6	29.6	18.0	9.1	9.5
14. How often do you lose sleep due to late-night log-ins?	16.5	24.9	21.7	15.0	21.8
15. How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?	50.9	24.2	13.9	3.8	7.2
16. How often do you find yourself saying "just a few more minutes" when on-line?	19.2	21.1	27.7	10.6	21.4
17. How often do you try to cut down the amount of time you spend on-line and fail?	33.3	29.2	19.8	6.6	11.1
18. How often do you try to hide how long you've been on-line?	55.6	24.2	8.1	6.6	5.5
19. How often do you choose to spend more time on-line over going out with others?	47.6	25.8	15.5	7.1	4.0
20. How often do you feel depressed, moody or nervous when you are off-line, which goes away once you are back on-line?	43.5	24.6	12.8	9.6	9.4

Participants were classified into three categories according to IAT total score, scores of 20-49 indicating an average on-line user who may surf the web a bit too long at times, but have control over their usage, scores of 50-79 indicating that the person is experiencing occasional or frequent problems because of the internet and s/he should consider their full impact on their life, scores of 80-100 indicating significant internet use problem. Analysis of data revealed that 375 (55.3%) were average internet users while 273 (40.3%) were experiencing occasional or frequent internet related problems while only 30 (4.4%) of the participants experienced significant internet related problems. Total IAT score ranged between 20-95 with a mean score of 48.25 (SD = 15.819). Mean male IAT score was 49.8+16.427 while female participants mean IAT score was 47.21+15.33. Chi square indicated significant difference between the two groups ($x2 = 7.565$, $P = 0.023$).

Table 5: Distribution of the Internet Addiction Test Categories between Male and Female Saudi Adults (n = 678)

IAT Categories	Male (n, %)	Female (n, %)	X^2	P
1. Average user	133 (48.9)	242 (59.6)		
2. Occasional problems	125 (46.0)	148 (36.5)	7.565	0.023
3. Internet addicted	14 (2.1)	16 (3.9)		
Total	**272 (100)**	**406 (100)**		

Pearson correlation indicated statistically significant correlation between average daily time spent on the internet (M = 7.03± 4.968) and the total IAT score (M = 48.25±15.819) as p = 0.380, p= 0.000.

Discussion

This study was conducted to evaluate the patterns of internet use among Saudi adult. In the present study, based on Young's internet addiction scale, the participants were categorized as average users, occasional internet use problems and internet addicted. Among 678 participants, 55.3% were average users, 40.3% were experiencing frequent internet use problems, which, clearly shows that a considerable percentage of Saudi adult population is travelling towards internet addiction and only 4.4% had internet addiction at present. In contrast to our study, a study conducted on prevalence and patterns of internet addiction among medical students by (Srijampana, Endreddy, Prabhath, and Rajana, 2014) revealed that among 211 medical students, 64.4% as average users, 11.8% as possible addicts, and 0.4% as addicts. A prevalence study done by (Ghamari, et al., 2011) on Iranian medical students, showed that overall prevalence of internet addiction was 10.8% and similar findings were observed in the study done by Siomos, Dafouli, Braimiotis, Mouzas, and Angelopoulos (2008) on Greek adolescent students, where the prevalence rate was 8.2%. The low percentage of Saudi adults who were considered as internet addicts can be explained by the demographic criteria of the participants, as the majority were students or workers who might be committed to their work obligations, in addition to the slightly high mean age of the participants of the current study.

In this present study the susceptibility of gender differences is clearly apparent in all categories such as; internet addicted (female 3.9%, male 2.1%), average users (male 48.9%, female 59.6%) and occasional problems (male 46.0%, female 36.5%). Statistical analysis using chi square indicated significant difference between the two groups. This finding can be interpreted by the fact that almost 60% of the current study participants were female. In contrast to this study is a Sinkkonen, Puhakka & Merilainen (2014) study, in which men had significantly higher mean score on the Internet Addiction Test (IAT) than did women as results of Finnish' study revealed 50% increased odds for males to be addicted to the Internet when compared with females. In addition, Srijampana et al., (2014) identified significant gender differences in internet usage among male and female. However, Usman, Alavi, and Shafeq (2014) showed that there were no gender differences in internet addiction.

Although almost 64% of the participants in the current study were students, it is captivating to recognize that internet use among Saudi adult participants had no direct impact on their academic achievements irrespective of the time spent on-line. This finding is contradicting the findings of the study by (Sachitra, 2014) on relationship between Internet Addiction and academic performance among university undergraduates who found that internet addiction negatively affected the students' academic performance. Furthermore, studies by Akhter (2013), Asemah et al., (2013). Leung and Lee (2012) reported that youth in Hong Kong who are addicted to the Internet, tend to have low academic performance. Likewise, a negative correlation between Internet addiction and grades was reported in Greek high school students (Panayides & Walker, 2012).

Even though the inconsistency between the findings of the current study and the study by Grover, Chakraborty, Basu (2012) in relation to the daily internet use. In the current study the average daily internet use was identified as between 30 minutes to 24 hours per day with a mean daily internet use of 7.03 hours (SD + 4.97) while on Grover et al., (2012) study the mean daily internet use was 2.13 hours (SD + 1.98), the longer duration of daily internet use in current study could be explained by the accessibility of internet connection as 100% of the participants in the current study had an internet access. Both studies revealed no statistically significant difference between male and female participants with regard to daily internet use.

Around three quarters of the participants of the current study found that they stay on-line longer than they intended and this finding is similar to the finding of the study by Christakis, et al. (2011) where 70 % of their participants reported the same. These findings raise a concern of increasing the risk for internet addiction as a result of increased exposure to the internet.

Almost half of current study participants reported that they often lose sleep due to late night online use, this finding is supported by the findings of the study conducted by (Cheung & Wong 2011) to evaluate the inter-relationships between insomnia, internet addiction and depression among Chinese adolescents, they found that among students with internet addiction (17.2%), 15.7% were identified to have insomnia. Furthermore, in their study (Canan, Yildirm, Sinai, Ozturk, Ustunel, Ataoglu, 2013) to examine the correlation between problematic Internet use and sleep disturbance symptoms among adolescent students, they revealed that Internet addicts were more likely to have difficulty in falling asleep and experienced night awakenings. Furthermore Cao, et al. (2011) in their study compared the normal internet use and problematic internet use among adolescents and confirmed that problematic internet use leads to psychosomatic symptoms, emotional symptoms and social adaptation problems.

Conclusions and Recommendations

Findings of this study give an overview of the problem of maladaptive internet use. Although the identified percentage of Saudi adult participants fitting to the category of internet addiction is very low but still the results show that major percentage of participants had occasional problems which can be considered as a bridge to internet addiction. Accordingly there is a need to gain insight into the problem and develop and expand awareness about the harmful consequences of maladaptive internet use through interactive programs and mass media.

Current research lacks studies to investigate the impact of internet use. Studies in various cultures report Internet addiction as a concern (Jiang & Leung 2012, Young, Yue & Ying 2011). Further research is required to address different risk factors for Internet Addiction, such as negative self concept and problematic social integration as well as the vigorous consequences of maladaptive internet use.

Based on the findings of this study, the following recommendations are suggested:

- Replicate the current study on larger sample size using a combined quantitative and qualitative research approach to better understand patterns of internet use among Saudi adults.
- Develop and implement public awareness campaigns about the hazards of maladaptive internet abuse and the services available to help persons with such problems within the Saudi community in public areas of highest community assembling and throughout all media channels including TV, radio, internet, SMS messages… etc.
- Develop awareness programs specific for school and college students and other high risk groups about the physical and mental hazards of maladaptive internet use are urgently needed to meet those groups' unique needs.
- Conduct multiple and regular "stress management" programs for high risk groups to help them to cope with life stressors and to minimize the possibility of maladaptive use of the internet.

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Conflict of Interests

The authors declare that they have no conflict of interests with any organization regarding the materials discussed in this manuscript.

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References

Akhter, N. (2013). Relationship between Internet Addiction and Academic Performance among University Undergraduates. Educational Research and Review. 8(19), Pp. 1793-1796.

American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders, 5th ed. American Psychiatric Publishing, Washington, DC, London, England. Pp 795-797.

Asemah, E.S., Okpanachi, R.A. and Edegoh, L.O.N. (2013). Influence of Social Media on the Academic Performance of the Undergraduate Students of Kogi State University, Anyigba, Nigeria. Research on Humanities and Social Sciences, 3(12), Pp. 90-96

Beutel, M.E. Hoch, C. Woelfing, K. Mueller, K.W. (2011). Clinical characteristics of computer game and Internet addiction in persons seeking treatment in an outpatient clinic for computer game addiction. Z. Psychosom. Med. Psychother, 57, Pp. 77–90.

Block, J. J. (2008). Issues for DSM-V: Internet addiction. American Journal of Psychiatry, 165, Pp. 306–307.

Çam, E. & İşbulan, O. (2012). A new addiction for teacher candidates: Social Networks. The Turkish Online Journal of Educational Technology, 11(3), Pp. 14-19.

Canan, F., Yildirim, O., Sinani, G., Ozturk, O., Ustunel, T.Y., Ataoglu, A. (2013).Internet addiction and sleep disturbance symptoms among Turkish high school students, Journal of sleep Research, 11(3), Pp. 203-214.

Cao, H., Sun, Y., Wan, Y., Hao, J. (2011) Problematic Internet use in Chinese adolescents and its relation to psychosomatic symptoms and life satisfaction, BMC Public health. 11-802.

Cheung, L. M., & Wong, W. S. (2011). The effects of insomnia and Internet addiction on depression in Hong Kong Chinese adolescents: An exploratory cross-sectional analysis. Journal of Sleep Research. 20(2), Pp. 311–317.

Choi, K., Son, H., Park, M., Han, J., Kim, K., Lee, B., et al. (2009). Internet overuse and excessive daytime sleepiness in adolescents. Psychiatry and Clinical Neurosciences. 63(4), Pp. 455–462.

Christakis, D., Moreno, M., Jelenchick, L., Myaing, M. and Zhou, C. (2011). Problematic internet usage in US college students: a pilot study. BMC Med, 9: 77.

Ghamari, F., Mohammadbeigi, A., Mohammadsalehi, N., Hashiani, A.A. (2011). Internet addiction and modeling its risk factors in medical students, Iran. Indian J Psychol Med. 33, Pp. 158-162

Griffiths, A. (2005). "Components" model of addiction within a biopsychosocial framework. J. Subst. Use, 10, Pp. 191–197.

Grover, S., Chakraborty, K., Basu, D. (2010). Pattern of internet use among professionals in India. Industrial psychiatry journal, 19, Pp. 94-100.

Ha, J. H., Kim, S. Y., Bae, S. C., Bae, S., Kim, H., Sim, M., et al. (2007). Depression and Internet addiction in adolescents. Psychopathology, 40(6), Pp. 424–430.

Jiang, Q. & Leung, L. (2012). Effects of individual differences, awareness-knowledge, and acceptance of Internet addiction as a health risk on willingness to change Internet habits. Social Science Computer Review, 30(2), Pp. 170-183.

Ko, C. H., Hsiao, S., Liu, G. C., Yen, J. U., Yang, M. J., & Yen, C. F. (2010). The characteristics of decision making, potential to take risks, and personality of college students with Internet addiction. Psychiatry Research, 170(1–2), Pp. 121–125.

Konstantinos E. Siomos, Evaggelia D. Dafouli, Dimitrios A. Braimiotis, Odysseas D. Mouzas, and Nikiforos V. Angelopoulos (2008). Internet Addiction among Greek Adolescent Students. CyberPsychology & Behavior. 11(6), Pp. 653-657.

Kuss, D.J. Griffiths, M.D. (2012). Internet gaming addiction: A systematic review of empirical research. Int. J. Ment. Health Addict, 10, Pp. 278–296.

Leung, L. & Lee, P. (2012). Impact of internet literacy, Internet addiction symptoms and Internet activities on academic performance. Social Science Computer Review, 30(4), Pp. 403-418.

Mittal VA, Dean DJ, Pelletier A. (2012). Internet addiction, reality substitution and longitudinal changes in psychotic-like experiences in young adults. Early Interv Psychiatry. 7(3), Pp. 261-9.

Oktug, Z. (2010). Gender Differences in Internet Addiction and Tendency to Express Emotions. Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 1, Pp. 39-53.

Panayides, P., & Walker, M. J., (2012). Evaluation of the psychometric properties of the Internet Addiction Test (IAT) in a sample of Cypriot high school students: The research measurement perspective. *Europe's Journal of Psychology, 8*(3), Pp. 327-351.

Park, S. K., Kim, J. Y., & Cho, C. B. (2008). Prevalence of Internet addiction and correlations with family factors among South Korean adolescents. Adolescence, 43(172), Pp. 895–909.

Petersen, K. U., Weymann, N., Schelb, Y., Thiel, R., & Thomasius, R. (2009). Pathological Internet use: epidemiology, diagnostics, co-occurring disorders and treatment. Fortschritte der Neurologie Psychiatrie, *77*(5), Pp. 263–271.

Sachitra, V. (2014). Relationship between Internet Addiction and Academic Performance among University Undergraduates, Srilanka. Academia.edu, Pp. 1-13.

Şahin, C. & Kırşehir, K. (2011). An Analysis of Internet addiction levels of individuals according to various variables. The Turkish Online Journal of Educational Technology, 10(4), Pp. 60-66.

Sinkkonen, H.M., Puhakka H., Meriläinen M. (2014). Internet use and addiction among Finnish adolescents . J Adolesc. 37(2), Pp. 123-131.

Srijampana, v., Endreddy, A., Prabhath, K., and Rajana, B. (2014). Prevalence and Patterns of internet addiction among medical students. Medical journal of Dr. Dy. Patil University, 7, Pp. 709-713.

Sun, D. L., Chen, Z. J., Ma, N., Zhang, X. C., Fu, X. M., & Zhang, D. R. (2009). Decision-making and proponent response inhibition functions in excessive Internet users. CNS Spectrum, 14(2), Pp. 75–81.

Tao, R., Huang, X., Wang, J., Zhang, H., Zhang, Y., & Li, M. (2010). Proposed diagnostic criteria for Internet addiction. Addiction, 105, Pp. 556–564.

Turel, O., Serenko, A., &Bontis, N. (2011). Family and work-related consequences of addiction to organizational pervasive technologies. Information & Management, 48, Pp. 88-95.

Usman, N.H., Alavi, M. and Shafeq, S.M. (2014). Relationship between Internet Addiction and Academic Performance among Foreign Undergraduate Students, Procedia - Social and Behavioral Sciences. 114, Pp. 845 -851

Weinstein, A., Feder, L. C., Rosenberg, K. P., Dannon, P. (2014). Behavioral Addictions, 1st ed. Elsevier Inc. Pp. 99-117.

Young, K. S., Yue, X. D. & Ying, L. (2011). Prevalence estimates and etiologic models of Internet addiction. In K. S. Young & C. N. de Abreau (Eds.). Internet addiction. Pp. 3-17.

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