Cognitive Behavior Therapy to Control Internet Addiction among Nursing Institute Students in Beni-Suef University, Egypt

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Abstract

Background: Addiction to the internet has become a social and public health issue, particularly among teenagers and adults. **The study aimed** to evaluate the effect of cognitive behavior therapy to control the internet addiction among nursing institute students in Beni-Suef University. **A quasi experimental research design** was used. **The setting and sample:** 40 students of the first year at nursing institute in Beni-Suef University who were diagnosed with internet addiction were included in the study. **Tools**: data were collected using an interviewing questionnaire composed of four parts; Part I: demographic data and pattern of internet use, Part II: Internet Addiction Diagnostic Questionnaire, Part III: negative consequences associated with internet addiction' questionnaire, Part IV: knowledge' questionnaire about internet addiction. **The results;** the present study findings indicated that after implementing the cognitive behavior therapy, the mean score of internet addiction among the studied sample was significantly decreased from 6.1±0.8 to 3.1±.1.2 (P=.00001). The results also added that the mean score of negative consequences was significantly decreased (P<0.05). **Conclusion:** The present study findings showed that the cognitive behavior therapy had significant impact on reducing the mean score of internet addiction and mean hours of internet use among nursing institute students, and was an effective strategy to reduce the negative consequences. **Recommendations**: Further studies aimed at improving students' awareness of internet addiction, and empowering them with the knowledge and skills they need to successfully avoid this problem.

Keywords: Cognitive behavior therapy, Internet addiction, Nursing institute students

Introduction

Computer and web utilize has gotten to be exceptionally common in all parts and age bunches of society, especially among young people. Youths are subjected to enthusiastic and social stretch, as well as a need of behavioral control as a result of their need of mental development, all of which energize them to take part in unsafe behaviors such as Web enslavement **(Kim et al., 2018)**. The concept of internet addiction is still controversial although there are several researchers agree on the following definition for the interned addiction. They reported that interned addiction is using the web bags by the rate that interferes with daily life activities and produce negative impact on health status, educational activities and social health (**Peng, Zhang, and Li, 2019)**.

The use of internet among college students has extended significantly, leading to obsessive internet use. It's imperative to keep in mind that internet addiction is linked to psychological and psychiatric issues and symptoms. Multiple researchers have found a relation between internet addiction and a variety of mental health problems, including counting despairing, uneasiness, consideration shortage hyperactivity clutter, social fear, forceful conduct, and suicide. Back strains, eye strain, eating disorders, and sleep disturbances have all been connected to it in terms of physical issues **(Wichstrom et al., 2019)**.

Management for internet addiction is comparative to manage any other sorts of enslavement. It includes cognitive behavioral treatment, interpersonal psychotherapy, and bolster bunches **(Wolfing and Dubovsky, 2019)**. Several studies reveal that cognitive behavioral therapy (CBT) is effective to control the internet addiction particularly for adolescents. Although cognitive behavioral therapy is not a specific treatment method, it is a broad word that refers to a range of therapies that aim to change clients'

beliefs in order for them to change their destructive habits **(Junhua and Fang, 2019)**.

Nurses have a vital responsibility not only in the assessment, early detection, and management of internet addiction, but also in its prevention. According to the WHO and the International Council of Nurses' recommendations, nurses must operate in this field as care providers, educators, therapists, counselors, health promoters, researchers, supervisors, and specialty consultants **(Fradelos et al., 2016)**.

Significance of the study

In Egypt about 29 million person use the internet that equal about one third of the population in 2012 compared to 12.8 million in 2008. About three quarter of the Egyptian internet café clients are adolescent **(Desouky and Ibrahem, 2015).** Cognitive behavioral therapy helps students to assess addictive behaviors, feelings, and the thoughts that can be risk factors to internet addiction. Therefore, CBT can be an effective intervention for internet addiction **(Liu, Nie, and Wang 2017). Malak, (2018)** reported that college students are the high-risk groups and more vulnerable for internet addiction**,** so the aim of the study was to evaluate the effect of cognitive behavior therapy to control internet addiction among nursing institute students in Beni-Suef.

Aim of the study

To evaluate the effect of cognitive behavior therapy to control internet addiction among nursing institute students in Beni-Suef.

Research hypotheses

This study was set out to test the following hypotheses:

I. The mean score of knowledge about the internet addiction among studied students improves after participation in the cognitive behavior therapy sessions than before.

II- The internet addiction score and hours of internet use among the studied students decrease after implementing the sessions of cognitive behavior therapy.

III. The studied students show more reduction regarding the negative health consequences of internet addiction after attending the sessions of cognitive behavior therapy than before.

Subjects and method

Research design:

A quasi-experimental design with pre-post assessment was used in this study.

Research Setting:

The current study conducted in nursing institute affiliated to faculty of nursing at Beni-Suef University.

Study subjects

The number of students of the first year at nursing institute was 270 students. The researchers did a survey to detect the addicted students by using the internet addiction diagnostic questionnaire. The total number of students who participated in the survey was (180 students), the number of addicted students after the survey was 58 students. 10 students were excluded after the pilot study and other 8 students withdraw during the study period and the researcher respected their decisions. So the total study sample was 40 students who accepted to participate to the end of the study.

Data collection tools:

1: Interviewing questionnaire composed of 4 parts; all parts were developed by the researchers unless the internet addiction diagnostic questionnaire.

Part I: demographic data and pattern of internet use: designed to collect data about students, it consists of 5 items about gender, residence, presence of access point in the home, years of using internet and favorite activity.

Part II: Internet Addiction Diagnostic Questionnaire (IADQ)

This questionnaire was developed by **Young (1998)** to assess criteria of internet addiction; it is a self-report measure which consists of the following criteria: preoccupation, tolerance, loss of control, withdrawal, negative consequences, denial, and escapism.

Scoring system

Each item of the criteria scored one if answered yes, and zero if no. If the scores were five or more of the criteria, it indicates internet addiction. All scores were summed and converted to mean and standard deviation to be used statistically to test the impact on the intervention

Part III: Negative health consequences of internet addiction' questionnaire

Consists of emotional, social, and physical symptoms. Regarding emotional symptoms there were 8 items as following feeling of guilt, anxiety, Inability to prioritize or keep schedules, No sense of time, defensiveness, agitation, boredom of routine tasks. Regarding social symptoms there were 7 items as weak relationship with relatives and parents, decrease relative visits, prefer online chatting. Finally there were 9 items to assess physical complains as sleeping disturbance, backache, neck pain, dry eye.

Scoring system:

Each item was given a score 3 for usually, score 2 for some times and score one for rarely. All scores were summed and converted to mean and standard deviation to be used statistically for comparison after the intervention.

Part IV: Knowledge' questionnaire

Including meaning of internet addiction, risk factors, signs and symptoms, negative consequences.

Scoring system for knowledge: the score was 3 if complete and correct answer, 2 if incomplete and correct answer, and scored 1 if didn't know. All scores were summed and converted to mean and standard deviation to be used statistically for comparison after the intervention.

Validity and reliability:

Once the tools were prepared, tool validity test was done through five panels of expertise (they are faculty members of community health nursing and medical surgical nursing departments). Who revised the tools for clarity, relevance, applicability, comprehensiveness, and ease for implementation According to their opinion, minor modifications were applied. Moreover, the validity and reliability of Internet Addiction Diagnostic Questionnaire was previously ascertained in the literature as mentioned before. Additionally, the reliability of the questionnaire to assess knowledge about internet addiction was 0.87 and the reliability of the questionnaire to assess the negative consequences of internet addiction was 0.81 with Cronbach's alpha coefficient.

Pilot study*:*

A pilot study was conducted on ten students who were diagnosed with internet addiction, to evaluate the content of the questionnaire as well as to measure the time needed to collect the date and to evaluate the validity of the tools. The researchers made the required modifications of the tools to reach to the finalized form. The students who took part in the pilot study were excluded from the study sample.

Ethical considerations

Oral consent was taken from students included in the study, they were informed that the data collected will be used for the research only, and confident manner is assured. During the initial interview, the purpose of the study and the procedures were explained to the participants. Participants will be assured that their participation in the study is voluntary and that they can refuse or withdraw from the study at any time. It will be explained that there are no costs to participate in the study.

Procedure

- Data collection of the study was started at the beginning of October 2019 and completed by the end of February 2020.
- Official permission was obtained first from the Security Department, then from the dean of the nursing faculty. Based on their approvals, permission was taken from the director of nursing institute to collect the data.
- The researcher first explained the aim of the study to the participants and reassures them that information collected will be treated confidentiality and that it will be used only for the purpose of the research.
- The researcher started recruiting the sample by using survey to determine the internet addicted.
- The researchers met the students and explain the purpose and the procedures of the study. Those who gave their consent to participate were interviewed using the questionnaire form, including the Internet Addiction Diagnostic Questionnaire (IADQ)

and questionnaire to assess the negative consequences associated with internet addiction.

- The researcher divided the participants to 5 groups then arranged one meeting every week with each group 45 minutes. The implementation of the cognitive behavior therapy divided to 3 stages based on session limited framework of cognitive behavior therapy.
- Every stage was implemented through 3 weeks.

I-The first stage includes Acknowledgement the problem and self-discovery

First session: give a comprehensive overview about the internet addiction and its consequences

Second session: The researchers help students recognizing what missing, passive thoughts and feeling

Third session: the researchers help students to find their stimulants or risk factors that lead to excessive use

II- The second stage includes auto-observation and time management

Forth session: training the students to observe their on-line time, and patterns of internet use.

Fifth session: educating new skills to the students to cope with the stressors and anxiety as problem solving skills, relaxation techniques and goal-setting**.**

Sixth session: help students to participate in enjoyable activities such as hobbies, social activities and exercise to decrease the time of internet use.

III- The third stage includes relapse prevention and finally avoids relapse triggers.

Seventh session: help students to avoid relapse triggers as loneliness, stress and anxiety by engaging in more social activities. Ask students note the benefits of recovery and the withdrawal symptoms and help them to manage these symptoms. Ask students to use external alarm or stop watch as stoppers of internet use

Eighth session: help students to improve life style skills by changing diet, practicing exercise adopt healthy habits regarding rest & sleep and avoid smoking.

Ninth session: review of techniques presented at previous sessions and providing open discussion with the students to answer their questions.

- The collection of data was done at the beginning and at the end of the study.

IV- Statistical Design:

The collected data were organized, tabulated, and statistically analyzed using SPSS version 19 (Statistical Package for Social Studies) created by IBM, Illinois, Chicago, USA. For numerical values, the mean and standard deviations were calculated. Paired T test was used to detect the statistical differences between variables. The level of significant was adopted at $p<0.05$.

Results

Table (1) shows the distribution of students regarding their demographic characteristics and pattern of internet use. The data reveals that 62.5% of studied students are females and 65% of them reside in rural areas and 70% use the internet more than 3 years. The mean age of the students is 18 year±1.2.More than half of the studied students (60%) access the internet for the social media while only 12.5% for online learning.

Table (2) describes the distribution of studied sample regarding their knowledge about internet addiction. The data reveals that the percentages of correct and complete answers regarding all items have improved after the intervention. The mean score of the studied sample has significantly improved from 13.8±1.8 to 23.3±.8 and P is (.0001).

Table (3) describes the distribution of studied students according to items of internet addiction diagnostic questionnaire pre intervention. The data reveals that the 100% of the students unable to control online use followed by 97.5% feel the need to use the internet for increasing amounts of time in order to achieve satisfaction. The table also shows that 87.5% of them feel restless, moody, depressed, or irritable when don't have access to the internet and the same percentage for using the internet as a way of escaping from problems or of relieving a dysphonic mood. Finally the data shows that the mean score of internet addiction for the studied students is 6.1 and the standard deviation is 0.8.

Table (4) reveals the comparison between mean score of internet addiction criteria and mean hours of internet use among studied students before and after intervention. The

table shows significant improvement of the studied sample regarding mean score of internet addiction. The mean was 6.1±0.8 before intervention compared with 3.1±1.2 after the intervention (p value=.00001). Regarding mean hours of use was decreased significantly from 7.2±0.5 before the intervention compared to 4.1±0.3 after the intervention (p value=.00001).

Table (5) describes the distribution of studied students regarding negative physical consequences. The data reveals that of the majority of studied students usually suffer from dry eyes followed by backache and Neck pain (80%, 75%, and 67.5% respectively). The table also shows that 62.5% of them reported that they usually change in eating pattern and the same percentage for neglecting personal hygiene. Moreover the table shows that the mean score of physical symptoms among the studied students is 19.5 and the standard deviation is 1.3.

Table (6) describes the distribution of studied students regarding negative emotional consequences. The data reveals that 72.50% of the students report feeling of guilt and the same percentage report no sense of time. The table also shows that 67.5% of them reported inability to prioritize or keep schedules. The data also shows that the mean score of emotional disorders among the studied students is 20.8 and the standard deviation is 1.9.

Table (7) describes the distribution of studied students regarding negative social consequences problems. The data reveals that 60% of the students report acquiring negative behaviors from networking sites followed by 55% of them preferred chatting with their friends online rather than interviewing them and the same percentage of the studied sample reported weak relationships with the relatives and friends. Moreover the data denotes that the mean score of social problems among the studied students is 16.7 and the standard deviation is 1.7.

Table (8) reveals comparison between mean scores of the physical, emotional & social consequences of internet addiction among studied students before and after intervention. The data indicates significant improvement in students' mean score for physical, emotional and social consequences after intervention (p=.00001).

Table (1): distribution of studied students regarding their demographic characteristics and pattern of internet use (N=40).

Socio-demographic Characteristics	No.	%
Gender:		
Male	15	37.5
Female	25	62.5
Residence		
Rural	26	65.0
Urban	14	35.0
Years of internet use		
1- 3 years	12	30.0
More than 3 years	28	70.0
Internet access at home		
Yes	16	40
No	14	60
The most favorite activity during internet access		
Online learning	5	12.5
Watching movies	11	27.5
Social media	24	60.0
Mean age of the students	18±1.2	

Table (2): distribution of studied sample according their knowledge about internet addiction before and after Cognitive Behavior Therapy intervention (N=40)

Items	Before		After	
	N	%	N	%
Meaning of internet addiction				
• Complete and correct	15	37.5	33	82.5
• Correct and not complete	17	42.5	5	12.5
• Didn't know	8	20.0	2	5.0
Risk factors				
• Complete and correct	9	22.5	28	70.0
• Correct and not complete	17	42.5	7	17.5
• Didn't know	14	35	5	12.5
Sign and symptoms of internet addiction				
• Complete and correct	12	30.0	29	72.5
• Correct and not complete	20	50.0	7	17.5
• Didn't know	8	20.0	4	10.0
Negative physical impact				
• Complete and correct	11	27.5	`31	77.5
• Correct and not complete	8	20.0	4	10.0
• Didn't know	21	52.5	5	12.5
Negative social impact				
• Complete and correct	13	32.5	29	72.5
• Correct and not complete	16	40.0	7	17.5
• Didn't know	11	27.5	4	10.0
Strategies to reduce addiction				
• Complete and correct	12	30.0	31	77.5
• Correct and not complete	8	20.0	7	17.5
• Didn't know	20	50.0	2	5.0
Strategies to control triggers				
• Complete and correct	10	25.0	29	72.5
• Correct and not complete	7	17.5	9	22.5
• Didn't know	23	57.5	2	5.0
Withdrawal symptoms				
• Complete and correct	15	37.5	33	82.5
• Correct and not complete	11	27.5	6	15.0
• Didn't know	14	35.0	1	2.5
How to deal with withdrawal symptoms				
• Complete and correct	3	7.5	31	77.5
• Correct and not complete	15	37.5	5	12.5
• Didn't know	22	55.0	4	10.0
Mean score	13.8±1.8		23.3±.8	
T	11.2			
P	0.0001			

Table (3) distribution of studied students according to items of internet addiction diagnostic questionnaire pre intervention (N=40)

Items of internet addiction diagnostic questionnaire	Yes	
	N	%
Feel preoccupied with the internet (thinking about previous online activity or anticipating the next online session) (preoccupation)	33	82.5
Feel the need to use the internet for increasing amounts of time in order to achieve satisfaction (tolerance)	39	97.5
Unable to control your online use (loss of control)	40	100
Feel restless, moody, depressed, or irritable when you don't have access to the internet (withdrawal)	35	87.5
Jeopardized or risked the loss of significant relationship, educational opportunity because of the internet (negative consequences)	34	85.0
Lied to family members, or others to conceal the extent of involvement with the internet (denial)	27	67.5
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) (escapism)	35	87.5
Mean ± SD	**6.1± 0.8**	

Table (4) comparison between mean score of internet addiction criteria and mean hours of internet use among studied students before and after Cognitive Behavior Therapy intervention

Items	Before	After	T	P
Mean score of internet addiction criteria	6.1±0.8	3.1±1.2	6.5	0.00001
Mean hours of internet use daily	7.2±0.5	4.1±0.3	10.7	0.00001

Table (5) Distribution of studied students in relation to the negative physical consequences of internet addiction pre intervention. (N=40)

	Negative physical consequences	Usually		No		Some times	
		N	%	N	%	N	%
1	Sleeping disturbance	22	55.0	13	32.5	5	12.5
2	Backaches	30	75.0	5	12.5	5	12.5
3	Neck pain	27	67.5	8	20.0	5	12.5
4	Dry eyes	32	80.0	4	10.0	4	10.0
5	Change in weight	28	70.0	7	17.5	5	12.5
6	Change in eating speed	25	62.5	7	17.5	8	20.0
7	Skipping meals	21	52.5	7	17.5	2	5.0
8	Irregular meal time	6	15.0	30	75.0	4	10.0
9	Neglect personal hygiene	25	62.5	7	17.5	8	20.0
Mean± SD		**19.5±1.3**					

Table (6): Distribution of studied students in relation to negative emotional consequences of internet addiction pre intervention. (N=40)

N	Items	Usually		No		Some times	
		N	%	N	%	N	%
1.	Feeling of guilt	29	72.5	6	15	5	12.5
2.	Anxiety	23	57.5	8	20	9	22.5
3.	Inability to prioritize or keep schedules	27	67.5	6	15	7	17.5
4.	No sense of time	29	72.5	5	12.5	6	15
5.	Defensiveness	25	62.5	6	15	9	22.5
6.	Agitation	24	60	9	22.5	7	17.5
7.	Mood swings	28	70	7	17.5	5	12.5
8.	Boredom with routine task	23	57.5	8	20	9	22.5
Mean± SD		**20.8±1.9**					

Table (7): Distribution of studied students in relation to negative social consequences of internet addiction pre intervention. (N=40)

No	Item	Usually		No		Sometimes	
		N	%	N	%	N	%
1	Avoid interaction between family members.	19	47.5	13	32.5	8	20.0
2	Avoid social meetings	22	55	9	22.5	9	22.5
3	Use of social media affects my relationship with my parents.	18	45	9	22.5	13	32.5
4	Prefere setting alone	21	52.5	8	20	11	27.5
5	The number of visits to relatives decreased.	21	52.5	12	30	7	17.5
6	Prefer chatting friends online rather than interviewing them.	22	55	6	15	12	30.0
7	Social networking sites contribute to teaching negative behaviors	24	60	8	20	8	20.0
Mean ± SD		**16.7±1.7**					

Table (8): Comparison between mean scores of the physical, emotional & social consequences of internet addiction among studied students before and after intervention

Symptoms of internet addiction	Before		After		T	P
	Mean	SD	Mean	SD		
Physical symptoms	19.5	1.3	11.3	2.4	12.7	.00001
Emotional symptoms	20.8	1.9	10.4	.8	10.8	.00001
Social symptoms	16.7	1.7	8.2	1.2	11.3	.00001

Discussion

Adolescents are the most active internet users in the world, spending about 3 hours every day online. This usage is having a variety of detrimental consequences that are gradually becoming apparent **Hassan et al., (2020).** This study was aimed to evaluate the effect of cognitive behavior therapy to control internet addiction level among technical school students in Beni-Suef.

The results of current study supported that hypothesis and showed that after intervention program there was statistical significant improvement in mean score of knowledge and the P value was less than 0.05. These results were in harmony with **Younis, Mahfouz and hossein, (2020)**, they found that the level of knowledge among the participants was significantly improved after the intervention where 48.3% had good knowledge and 44.1% had very good knowledge. In the same line **Gholamian, Shahnazi, and Hassanzadeh (2019**) illustrated that the mean scores of the participants regarding internet addiction knowledge were significantly greater than before the intervention.

The current study revealed that the cognitive behavior therapy (CBT) was an effective strategy to treat internet addiction and reducing the length of time on internet access among nursing institute students. There were statistical significant improvement in the mean internet addiction score, it improved from (6.1±0.8) before intervention to (3.1±1.2) after intervention. In this respect **Zeidi et al., (2020)** reported that (CBT) can be an effective treatment for the students who were diagnosed with internet addiction.

Additionally **Erden and Hatun (2015)** stated that there was significant reduction regarding internet addiction among studied sample and they has gained a healthy behavior surrounding the internet. On the other hand **Santos et al., (2016**) reported that some pharmacological treatments have been proposed and recommended with the implementation of cognitive behavior therapy to treat the internet addiction. In this respect **Chander, (2019)** stated that the teaching program had a positive effect on reducing internet addiction level among nursing college students.

Regarding the patterns of internet use, the current study results revealed that there was a significant decrease in the average number of internet hours use after the intervention (p value=.00001). The same outcome was stated by the study of **Maheri, Tol, & Sedeghi, (2017)**, they revealed that the number of hours used by internet was reduced after implementation the intervention. Moreover **Abdel-Salam et al., (2019)** stated that rate of internet uses decreased after intervention. More over **Joy, Rappai and Anumol (2017)** reported that there was significant decrease in the number of hours for internet use after the program and studied sample noted that they access the internet to acquire knowledge while minimal time for social media.

The results of current study clarified that there were significant improvement in students' mean score for physical, emotional and social negative consequences (p=.00001). These results were in agreement with **Liu, Nie and Wang, (2017)** who found that cognitive behavior therapy had a significant effect on internet addiction and the symptoms of mental illnesses. Moreover, **Young, (2013)** studied the treatment outcomes using CBT-IA with internet-addicted patients, and found that CBT-IA was very useful to alleviate the negative consequences associated with internet addiction after twelve weekly sessions.

Conclusion

The study findings indicated that the cognitive behavior therapy had a positive effect on reducing mean score of internet addiction criteria and mean hours of daily use of the internet among nursing institute students, moreover the studied students showed significant reduction regarding the negative health consequences of the internet addiction after attending the sessions of cognitive behavior therapy, and the knowledge of students about the internet addiction significantly increased after participation in the cognitive behavior therapy sessions.

Recommendations:

- Further studies aimed at improving students' awareness on internet addiction, and empowering them with the knowledge and skills they need to successfully avoid this problem.
- Community actions and educational programs should include sessions on internet addiction problems in combination with mass-media campaigns.
- Future studies should be conducted to compare cognitive behavior therapy (CBT-IA) with other treatment modalities to determine its therapeutic effect

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