Assessment of Knowledge, Beliefs and Level of Internet Addiction among Nursing Students at Minia University

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Abstract

Background: Worldwide, Internet addiction is a major and serious challenge. With uncontrolled use of the internet, university students may suffer from academic problems, distractions, and social isolation. **Aim:** This study aimed to assess knowledge, beliefs, and level of Internet addiction among nursing students at Minia University. The Health Belief Model was used as a theoretical framework in the study. **Design**: Descriptive research design. **Setting**: The study was conducted at the faculty of nursing at Minia University. **Sample:** Three hundred and seventy (370) students were included using a stratified random sample. **Tools**: Data collected using two tools, the 1st tool was a self-administered questionnaire based on The Health Belief Model to assess the students' knowledge and beliefs about Internet addiction, and the 2nd tool was the Arabic version of the Internet Addiction Test to assess the students' level of Internet addiction. **Results:** 91.1% of the participants had poor knowledge about Internet addiction. Regarding health beliefs toward IA, 66.5% had low perceived susceptibility, 64.1% had low perceived severity, 53.5% had high perceived barriers, 56.8% had high perceived benefits, 64.3% had low perceived cues to action, and 73% had low perceived self-efficacy. Concerning the level of Internet addiction, 44.6% had a mild level followed by 38.9% had a moderate level and 3.5% had a severe level of Internet addiction. **Conclusion:** The majority of participants had poor knowledge and low Health Belief Model constructs toward Internet addiction except for perceived barriers. The majority had mild and moderate levels of Internet addiction and the minority had a severe Internet addiction. **Recommendation:** strategies should be developed to increase awareness and decrease the level of Internet addiction among university students.

Key words: Internet addiction, Beliefs, Knowledge, Level

Introduction

The Internet has become one of the most important tools for knowledge, work opportunities, education and amusement involving social media platforms and networking and is increasingly developed to be a structural element of our daily life **(Thakur al., 2018)**. Over the past fifteen (15) years, Internet use has grown very fast: in current society about 40% of the global population is online **(Kuss et al., 2014).** The growing popularity and frequency of internet use has resulted in the appearance of clinical conditions manifesting abuse symptoms identified as Internet addiction (IA) **(Spada, 2014).** Internet addiction is classically defined as a condition where an individual has impaired control of their internet use and proceed to use the internet too much to the point where he/she suffers problematic effects which ultimately have negative consequences on his/her life**(Smyth et al., 2019).** Internet addiction primarily put forward by Ivan Goldberg in 1995 and since then, it has become a social-psychological problem and a lot of researchers have been studying this topic **(Dongyun et al., 2018; Wiederhold, 2018& Griffiths, 2018)**. Even though IA was not formally added into the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) in 2013, Internet Gaming Disorder (IGD) has been involved in sector III, highlighting the significance of this area for further study **(Petry & O'brien, 2013; Cho et al., 2014; Hahn et al., 2017& Spada, 2014).**

Assessment of knowledge and beliefs regarding safe usage of the internet is necessary. **Ong and Tan (2014)** in a study aimed to assess IA in young people showed that knowledge of IA among the public is a pertinent factor in the prevention efforts regarding IA. **Maheri et al., (2017)** showed that improving college students' knowledge and attitude about the addictive nature of the internet and side effects of IA are crucial for the prevention of IA**(Maheri et al., 2018).**The role of the nurse is to contribute to the preventive and therapeutic intervention to face this phenomenon. The nurse should help students to understand the effects of excessive internet usage on themselves physically and mentally and how to overcome these impacts of internet addiction**(Hamzaa, 2017).** Considering the globalization and the complexity of IA community health nurses must establish an effective program for the management of the addiction as well as the daily problems that such condition raises. Within the clinical context of mental health, nurses can have an effective role not only in the assessment, diagnosis, and treatment of IA but in the prevention of that phenomenon as well **(Fradelos et al., 2016).**

Significance of The study

Internet addiction (IA) is a worldwide phenomenon with different levels and it ranges from five to twenty-five percent among students in the united states (US), China, South Korea, England, Australia, Taiwan, Japan, and other countries in Eastern and Western Europe **(Maheri et al., 2017)**. Internet World Stats revealed that Egypt has the second-highest number of internet users in Africa after Nigeria. On average, Egyptians stay 26 hours a week on the internet according to the MidEast Media Survey 'Media Use in the Middle East' in 2017 **(Eltigani, 2019).** University students are particularly at risk for encountering dependence on the Internet, greater than other segments of the community. This can be attributed to numerous factors as the availability of time, easiness of use, limitless access to the Internet and limited or no familial supervision (**MMIN, 2017).** Assessment of IA among university students is a pertinent factor for its prevention effort**.**

Aim of the Study

The current study aimed to assess knowledge, beliefs and level of internet addiction among nursing students at Minia University

Theoretical Framework

One of the most commonly applied models in explaining and adopting healthy behaviors such as the protective behavior of addiction is the Health Belief Model (HBM) **(Zadeh et al., 2014)**. The HBM was created in the US in 1950 by the Department of Public Health Service to understand the reasons for the ineffectiveness of public health services directed toward the prevention of health problems. The application of the model after that extended for comprehending the adherence with clinical remedy **(Orji et al., 2012)**. Health Belief Model explains that health-related behaviors of people are based on their perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and perceived self-efficacy **(Zadeh et al., 2014).**

Subjects and Methods

Research Design

Descriptive research design was utilized in the current study.

Setting:

The study was conducted at faculty of nursing at Minia University.

Sample size

Sample size was calculated based on Cochran formula, (1963) while $\mathbf{n= t^2 \times p\ (1-p)/\ m^2}$ considering 41.5% prevalence rate of internet addiction according to **Abdelghani, M et al., (2018).**

Inclusion criteria for the study sample

(1) Undergraduate students at faculty of nursing at Minia University
(2) Currently using the internet for at least 3 hours/day and in the past 6 months

Study Tools

Tool 1: **A self-administered questionnaire developed by the researcher based on HBM and consisted of 4 parts as following:**

Part I: sociodemographic data of the students such as: Age, sex, faculty grade, residence, parents' education, family income, quality of relation with parents and friends, residence during studying, smoking status and academic average.

Part II: the student's knowledge about IA such as: definition, signs, causes, types of IA, its physical, psychological and social effects, and management of IA.

Scoring system

The scores for knowledge part of the questionnaire were calculated based on one point (1) for the correct answer and zero (0) for the wrong answer or don't know respectively. Therefore the participants were considered to have a very good level of knowledge if the total score >75 %, good if the total score ranged from 60-75% and poor if the total score < 60% **MMIN, M. (2017)**.

Part III: A five-point Likert scale based on HBM assessed the students' beliefs toward IA. The scale consisted of six subscales as following: Perceived susceptibility (one question) and perceived severity (5 questions), perceived barriers (9 questions), perceived benefits (6 question), cues to action (2 questions) and perceived self-efficacy (5questions).

Scoring system

The statements of this part were scored on a five-point likert-type scale as following: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The entire score for each subscale was calculated by summing up of all of its statements**.** With summed scores > 60% indicates a higher level of the HBM subscale/construct while a summed score ≤ 60% indicates a lower level of the subscale for each one.

Tool 2: **The Arabic version of Internet Addiction test (IAT):** It is a self-rated scale developed by Young (1998) to assess the existence and severity of IA. This tool consists of twenty (20) items; These 20 items involve distraction, compulsivity, and dependency. The items also assess conflicts in personal, social, or occupational life that may arise from the addictive use of the internet. The Arabic version of IAT has been validated in a study conducted in Lebanon by **Hawi (2013).**

Scoring system

The statements of the IA test were scored on a five-point Likert-type scale, rarely (1), occasionally (2), frequently (3), often (4), always (5). Sum of the scores that ranged from 0 to 30 points indicated a normal level of internet usage; scores of 31 to 49 reflected a mild level of IA; scores of 50 to 79 indicated a moderate level, and scores of 80 to 100 indicated severe internet dependence **(Young, 1998).**

Content Validity of the Tools

The content validity of the study tools was tested by five experts in community health nursing. The tools were examined for content coverage, sequence of items, clarity, relevance, applicability, words length, format, and overall appearance. Based on experts` comments, recommendations and modifications were made.

Reliability of the Tools

Reliability of the study questionnaire was calculated using Cronbach's alpha. Based on data analysis, coefficient alpha for the knowledge part was 0.78, perceived severity was 0.81, perceived barriers was 0.82, perceived benefits was 0.76, cues to action was 0.68, self efficacy was 0.92 , for all the subscales of the HBM was 0.080, and for the entire questionnaire was 0.70. As regard to the reliability of the IAT, it was 0.93.

Procedure

Before conducting the study an official permission was taken from the dean of the faculty of nursing to conduct the study**.** The interview with the students of each grade was held at their specialized faculty class. The researcher first introduced herself to the students, explained to them the purposes of the study briefly and an oral consent for participation was obtained. The tools of the study were filled

by the students and aided by the researcher. The time required to fill the questionnaire was about 15 minutes.

Pilot study

It was applied on 10% of the calculated sample to assess the validity of the questionnaire and to assess acceptability of the students to the topic of the research. The results of pilot study were included in the final results of the research as there were no major modifications were done in the tools of the study

Statistical Analysis

Data entry and statistical analysis were done using SPSS 24.0 statistical software package. Data presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. The Chi square used in tests of relationship. Probability (P-value) less than 0.05 was considered significant. ($p < 0.05$).

Ethical considerations

A written approval obtained from the ethics and research committee of the faculty of nursing at Minia University. Oral consent obtained from students after explaining the nature and objectives of the study to gain their cooperation. Each assessment sheet was coded for the purpose of privacy and confidentiality. Participants were free to withdraw from the study at any time.

Results

Table (1) Distribution of the studied Minia university nursing students according to their socioemographic characteristics in the academic year of 2018/2019 (n=370)

Socio-demographic characteristics	No	Percent%
Age		
18-21	244	65.9
22-24	126	34.1
Mean ± SD 20.78 ± 1.30		
Gender		
Male	150	40.5
Female	220	59.5
Faculty grade		
1st year	89	24.0
2nd year	85	23.0
3rd year	111	30.0
4th year	85	23.0
Residence		
Rural	278	75.1
Urban	92	24.9
Quality of relation with parents		
Good	358	96.8
Poor	12	3.2
Residence during study		
with family	231	62.4
away from family	139	37.6
Smoking		
Smoker	20	5.4
Non smoker	350	94.6
Academic performance		
Excellent	75	20.2
Very good	156	42.2
Good	105	28.4
Pass or weak	34	9.2
Father education		
Does not read or write	52	14.1
Primary	47	12.7
Preparatory	35	9.5
Secondary	128	34.6
University	83	22.4
Post university studies	25	6.8
Mother education		
Does not read or write	116	31.4
Primary	44	11.9
Preparatory	41	11.1
Secondary	109	29.5
University	48	13.0
Post university studies	12	3.2
Family income/month		
less than 2000 L.E	166	44.9
2000-3000 L.E	158	42.7
More than 3000 L.E	46	12.4

Table (1) shows that 65.9% of the participants are in the age group 18 – 21 yrs with a mean score± SD 20.78 ± 1.30, 59.5% of the participants are females, 75.1% live in rural areas, 96.8% have a good relationship with their parents, 62.4% are residents with their parents during the study, 5.4% are smokers, and 42.2% their academic performance is very good. The table also shows that 34.6% of the participants their fathers' education is a secondary education, 31.4% their mothers don't read or write, 44.9% of the participants their monthly family income is less than 2000 L.E

Table (2) Distribution of the studied Minia University nursing students according to their knowledge about definition and signs of IA (N=370)

Item	No	%
Definition		
• Complete answer	96	25.9
• Incomplete answer	258	69.7
• I don't know	16	4.3
Signs of IA[#]		
• Irritability during withdrawal	163	44.1
• Jeopardizing a significant relationship, or responsibilities	214	57.8
• Loss of sense of time during use		
• Check electronic notifications	206	55.7
• Preoccupation with the internet	114	30.8
• Failure to reduce time of use	105	28.4
• I don't know	185	50.0
	27	7.3

[#]**Mutual exclusive more than one answer**

Table (2) shows that 69.7% of the participants' definition of IA is incomplete while 4.3% don't know the definition of IA. Regarding knowledge about signs of IA 57.8% mention jeopardizing a significant relationship or responsibilities as a sign of IA while 7.3% doesn't know any signs of IA.

Table (3) Distribution of the studied Minia University nursing according to their knowledge about causes and social effects of IA (n=370)

Item	No	%
Causes[#]		
• Personal privacy	78	21.2
• Emotional relief	164	44.6
• Escape from reality	189	51.4
• Free time and boredom	202	54.9
• Feeling lonely	141	38.3
• Easy access	90	24.5
• I don't know	21	5.7
Social Effects[#]		
• Low academic performance	235	63.7
• Family disconnection	87	23.6
• low productivity of work	169	45.8
• I don't know	68	18.4

[#]**Mutual exclusive more than one answer**

Table (3) shows that 54.9% of the participants mention free time and boredom as a cause of IA while 5.7% don't know causes of IA. In relation to knowledge about social effects of IA, 63.7% mention low academic performance while 18.4% don't know its social effect

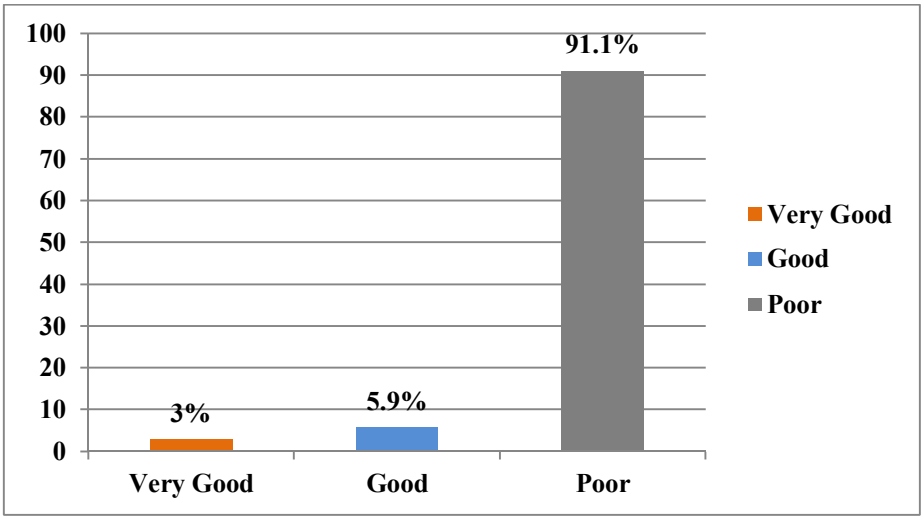

Fig. (1) Distribution of the studied Minia university nursing students according to their total level of knowledge about IA

Table (4a) Distribution of the studied Minia University nursing students according to their health beliefs toward IA (n=370)

Item	Strongly Agree		Agree		Neutral		Disagree		Strongly disagree	
	No	%	No	%	No	%	No	%	No	%
Perceived susceptibility Likelihood o be internet addict	42	11.4	82	22.2	103	27.8	107	28.9	36	9.7
Perceived severity IA is a serious disorder	35	9.5	60	16.2	74	20	160	43.2	41	11.1
Thinking of IA is a restless issue?	16	4.3	70	18.9	76	20.5	168	45.4	40	10.8

Item	Strongly Agree		Agree		Neutral		Disagree		Strongly disagree	
	No	%	No	%	No	%	No	%	No	%
IA negatively affect my health	27	7.3	70	18.9	74	20	161	43.5	38	10.3
IA negatively affect me academically	68	18.4	154	41.6	72	19.5	55	14.9	21	5.7
IA may socially isolate me	55	14.9	102	27.6	92	24.9	82	22.2	39	10.5
Perceived barriers limited social connection	78	21.1	98	26.5	76	20.5	92	24.9	26	7.0
Life seems boring without internet	54	14.6	116	31.4	68	18.4	84	22.7	48	13.0
Feeling lost without internet	60	16.2	68	18.4	80	21.6	107	28.9	55	14.9
Being an old fashioned person	61	16.5	95	25.7	55	14.9	103	27.8	56	15.1
No encouragement to ↓ online time	58	15.7	92	24.9	61	16.5	126	34.1	33	8.9
Feeling lonely without internet	76	20.5	88	23.8	82	22.2	87	23.5	37	10
Negative effect on self-esteem	47	12.7	37	10	69	18.6	119	32.2	98	26.5
No other way to relieve stress	102	27.6	79	21.4	50	13.5	86	23.2	53	14.3
No help in decision making without internet	66	17.8	82	22.2	70	18.9	104	28.1	48	13

Table (4a) shows that 28.9% of the participants disagree they are susceptible to IA. As regards to their Perceived severity of IA, 43.2% disagree that IA is a serious disease of the era. In the same domain of perceived severity, 45.4% disagree that thinking about the negative effects of IA on health is a restless issue, 43.5% disagree that IA may negatively affect their health, 41.6 agree that IA may negatively affect their academic performance, and 27.6% of the participants agree that IA may socially isolate them from their family.

Regarding the participants' perceived barriers toward reducing internet use, the same table shows that 26.5% agree that reducing internet time limit their social contact with friends and relatives, 31.4 agree that life seems boring without internet, 28.9% disagree they will feel lost if they reduce their internet time, 27.8% disagree that they will be an old fashioned if they reduced their internet time, 34.1% disagree that nobody encourages them to reduce their internet time, 23.8% agree they will feel lonely if reduce their internet time, 32.2% disagree that reducing internet time may negatively affect their self-esteem, 27.6% strongly agree that there is no other way to relieve stress if they reduced their internet use, and 28.1% agree that nobody will help them in their decision making if they reduce internet use.

Table (4b) Distribution of the studied Minia University nursing students according their health beliefs toward IA (n=370)

Item	Strongly Agree		Agree		Neutral		Disagree		Strongly disagree	
	No	%	No	%	No	%	No	%	No	%
Perceived benefits 1-Focusing on important issues	49	13.2	104	28.1	112	30.3	54	14.6	51	13.8
2- Positive effect academically	71	19.2	156	42.2	68	18.4	50	13.5	25	6.8
3- Good relation with family/friends	45	12.2	93	25.1	108	29.2	96	25.9	28	7.6
4- Self satisfied with reduced use	36	9.7	141	38.1	122	33	48	13	23	6.2
5- Enjoying personal privacy	49	13.2	103	27.8	121	32.7	72	19.5	25	6.8
6- Positive effects on health	27	7.3	68	18.4	75	20.3	162	43.8	38	10.3
Cues to action 1- Cues to action from parents	43	11.6	142	38.4	27	7.3	97	26.2	61	16.5
2- Cues to action from teachers	26	7.0	93	25.1	37	10	117	31.6	97	26.2
Perceived self-Efficacy 1- Ability to reduce internet time?	25	6.8	78	21.1	91	24.6	85	23.0	91	24.6
2- Easiness to reduce internet time	23	6.2	58	15.7	40	10.8	98	26.5	151	40.8
3- Having a plenty of ideas to reduce internet time	19	5.1	51	13.8	83	22.4	103	27.8	114	30.8
4- If I worked hard on reducing time of internet use, I would do it.	24	6.5	60	16.2	82	22.2	99	26.8	105	28.4
5-I intention to reduce daily hours of internet time	33	8.9	90	24.3	114	30.8	62	16.8	71	19.2

Table (4b) shows that 30.2% of the participants are neutral about giving priority to important life issues as perceived benefits of reducing internet, 42.2% agree that reducing the time of using the internet has a positive effect on their academic achievements, 29.2% are neutral about the benefit of improving their family and friends relation quality if they reduce internet time, 38.1% agree that reducing their internet time will make them self satisfied, 32.7% are neutral about enjoying more personal privacy as a benefit of reducing internet time, and 43.8% disagree that reducing internet time has positive effects on their health.

As regards to cues to action toward IA, the same table shows that 38.4% of the participants agree that their parents asking for reducing internet time, 31.6% disagree that their teachers ask them to reduce their internet time. Concerning perceived self-efficacy toward reducing internet time, 24.6% are neutral that they have the ability finding suitable ways to reduce internet usage, 40.8% strongly disagree that it is easy to reduce internet time, 30.8% disagree that they have a plenty of ideas how to reduce internet time, and 30.8% are neutral about their intention to reduce daily hours of internet use.

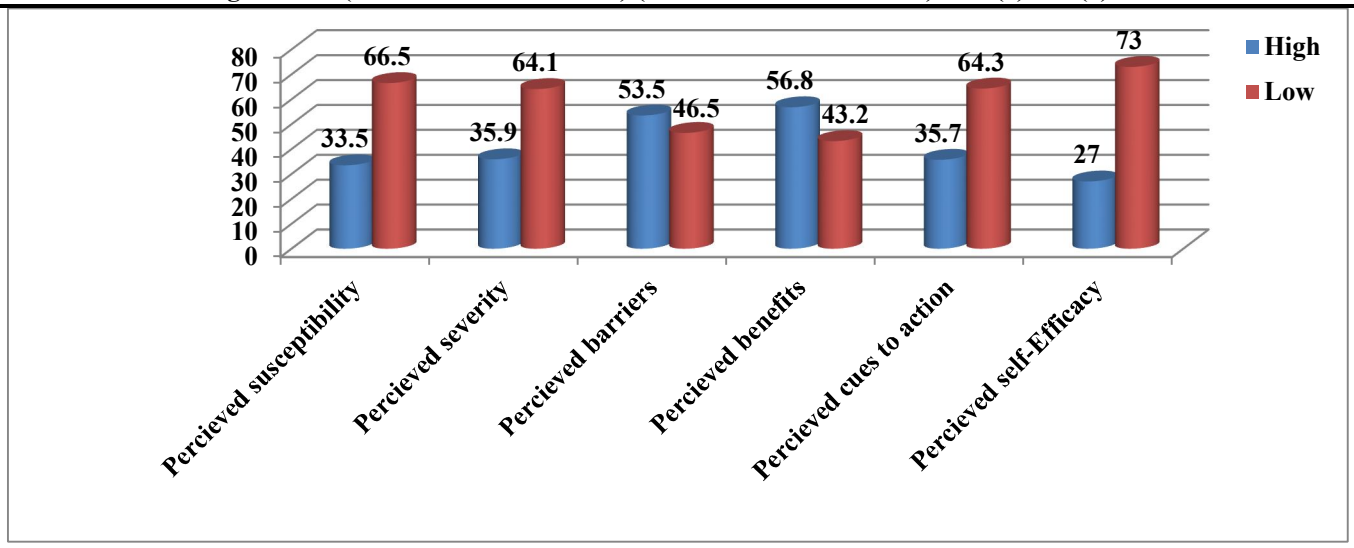

Fig. (2) Distribution of the studied Minia University nursing students' level of health beliefs toward IA

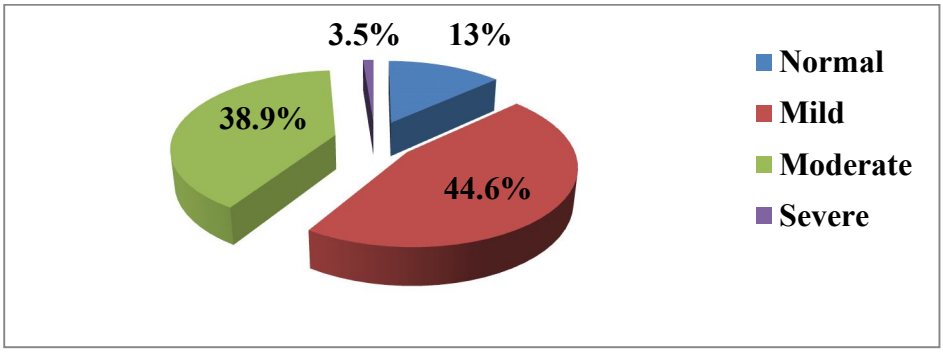

Fig. (3) Level of IA among the studied Minia university nursing students, according to Young's IAT (1998)

Fig. (3) Illustrates that, 44.6% of the participants had a mild level of IA followed by 38.9% had a moderate level, and 3.5% had a severe level of IA.

Table (5): Relation between the studied Minia University nursing students' total level of IA and their socio-demographic data (n=370)

Variables	Level of IA (n=370)								X^2	P
	Normal (n=48)		Mild (n=165)		Moderate (n=144)		Severe (n=13)			
	No	%	No	%	No	%	No	%		
Age(year)										
▪18-21	35	72.9	104	63.0	98	68.1	7	53.8	2.7	0.4
▪22-24	13	27.1	61	37.0	46	31.9	6	46.2		
Gender										
▪Male	7	14.6	64	38.8	69	47.9	10	76.9	24.1	0.001*
▪Female	41	85.4	101	61.2	75	52.1	3	23.1		
Faculty Grade										
▪1st year	9	18.8	28	17.0	47	32.6	5	38.5	26.2	0.002*
▪2nd year	13	27.1	49	29.7	22	15.3	1	7.7		
▪3rd year	17	35.4	41	24.8	50	34.7	3	23.1		
▪4th year	9	18.8	47	28.5	25	17.4	4	30.8		
Residence										
▪Rural	34	70.8	128	77.6	110	76.4	6	46.2	6.9	0.07
▪Urban	14	29.2	37	22.4	34	23.6	7	53.8		
Father Education										
▪Do not read or write	9	18.8	18	10.9	24	16.7	1	7.7	18.1	0.2
▪Primary	5	10.4	24	14.5	16	11.1	2	15.4		
▪Preparatory	7	14.6	11	6.7	16	11.1	1	7.7		
▪Secondary	16	33.3	67	40.6	41	28.5	4	30.8		
▪University	8	16.7	31	18.8	41	28.5	3	23.1		
▪Post university	3	6.3	14	8.5	6	4.2	2	15.4		
Mother Education										
▪Do not read or write	14	29.2	48	29.1	49	34.0	5	38.5	14.9	0.4
▪Primary	10	20.8	22	13.3	12	8.3	0	0.0		
▪Preparatory	5	10.4	20	12.1	15	10.4	1	7.7		
	12	25.0	55	33.3	39	27.1	3	23.1		

Variables	Level of IA (n=370)								X^2	P
	Normal (n=48)		Mild (n=165)		Moderate (n=144)		Severe (n=13)			
	No	%	No	%	No	%	No	%		
▪Secondary	6	12.5	15	9.1	24	16.7	3	23.1		
▪University	1	2.1	5	3.0	5	3.5	1	7.7		
▪Post university										
Family income/month										
▪less than 2000 L.E	21	43.8	75	45.5	69	47.9	1	7.7	17.5	0.008*
▪2000-3000 L.E	25	52.1	71	43.0	51	35.4	11	84.6		
▪more than 3000 L.E	2	4.2	19	11.5	24	16.7	1	7.7		
Residence during study										
▪with family	29	60.4	109	66.1	85	59.0	8	61.5	1.7	0.6
▪away from family	19	39.6	56	33.9	59	59.0	5	38.5		
Smoking										
▪Smoker	0	0.0	8	4.8	9	6.3	3	23.1	10.9	0.01*
▪Non smoker	48	100.0	157	95.2	135	93.8	10	76.9		
Academic performance										
▪Excellent	16	33.3	32	19.4	27	18.8	0	0.0	39.6	0.001*
▪Very good	20	41.7	81	49.1	52	36.1	3	23.1		
▪Good	9	18.8	45	27.3	47	32.6	4	30.8		
▪Pass or weak	3	6.3	7	4.2	18	12.5	6	46.2		

*** Statistical significant difference**, **Chi-squared test.**

Table (6) shows that there are significant statistical differences between the level of IA and gender of the participants while males have a significant sever level of IA compared to females where the p-value is 0.001. The same table shows that there are significant statistical differences between the level of IA and faculty grade of the participants where the p-value is 0.002. An additional statistically significant difference is found between the level of IA and monthly family income of the participants while participants with a monthly family income ranges from 2000-3000 LE have a significant severe level of IA compared to others where the p-value is 0.008. Another statistically significant dereference is found between the level of IA and smoking status of the participants while non-smokers have a significant severe level of IA compared to smokers where the p-value is 0.01. The same table shows that there are significant statistical differences between the level of IA and academic level of the participants while participants whose academic performance is pass/weak have a significant severe level of IA compared to those with higher academic performance where the p-value is 0.001.

Discussion

One of the significant attributes of the current societies is the increased media utilization particularly the internet. Important benefits of the internet shall not delude us from the rising inclination of IA **(Maheri et al., 2018).** The current study aimed to assess knowledge, beliefs, and level of IA among nursing students at Minia University.

As regards to the level of knowledge about IA among the participants, the current study revealed that the majority (91.1%) of the participants had a poor level of knowledge about IA followed by 5.9% had good knowledge, and the minority (3%) had very good knowledge. This result agreed with **Chander (2019)** who revealed that the majority (78.33%) of the participants had a poor level of knowledge and less than one quarter (21.67 %) had a good level of knowledge about the negative effects of IA. Similar to the current study **MMIN (2017)** found that the majority (58%) had an average knowledge, followed by about one-third (34%) had good knowledge regarding using of the internet. A Previous study by **Zadeh et al. (2014**) reported that knowledge is essential for admitting healthy behavior such as addiction protective behaviors. Also knowledge about the negative effects of addictive behaviors can save students against it**.** Thus, raising knowledge of university students about the addictive nature of the internet and side effects of IA is necessary for changing their IA behavior.

As regard to health beliefs toward IA among the participants, the current study showed that less than half (38.6%) of the participants disagreed with their susceptibility to IA. similarly, **Wang et al. (2016)** revealed that more than half (53.2%) of the participants disagreed with their susceptibility to IA. Concerning the beliefs regarding the severity of IA, the current study showed that more than half (54.3%) of the participants disagreed with the severity of IA. This result contradicted **Lau et al. (2018)** who found that about half (48%) of the participants agreed with the severity of IA. This contradiction might be attributed to the poor level of knowledge about IA among participants of the current study.

Concerning the participants' beliefs regarding the barriers to reduce internet time, the current study revealed that about near to half (46%) of the participants agreed that feeling bored without the internet is a barrier for reducing internet time. This finding was congruent with **Lau et al. (2018)** who detected that about half (47%) of the participants had the same belief. Another important barrier for reducing internet time perceived by the participant of the current study is that the internet is the main way for relieving stress in their life, while that barrier is agreed on by about half (49%) of the participants. Based on a study explored the multidimensional needs of students for the prevention of IA by **Shahrbabaki et al. (2017)** adequate societal support such as designing entertainment programs for students or organizing sports events can help overcome these barriers.

Regarding the participants' perceived benefits of decreasing the internet time, the current study revealed that about two thirds (61.7%) of the participants agreed that an important benefit of reducing internet time is the positive effect on their academic study. Similarly, **Lau et al. (2018)** revealed that about half (47%) of the participants agreed that improving academic performance is a benefit of reducing internet use. Concerning the perceived self-efficacy toward

reducing internet time, the current study revealed that more than two-thirds (67.3%) of the participants disagreed with the easiness of reducing internet time. Contrary to the current study, **Wang et al. (2016)** revealed that more than half (55.8%) of the participants disagreed with the difficulty of reducing the internet use.

According to Young (1998) IAT, the current study showed that 13% of the participants were normal internet users, less than half (44.6%) had a mild level of IA followed by more than one third (39.9%) had a moderate IA, while the minority (3.5%) had a severe level of IA. These findings were in harmony with **Khalil et al. (2016)** who detected that more than one third (38.4%), and 2.1% of participants were categorized as moderate to severe internet addict respectively while almost two-thirds (59.6%) of the participant students were average (normal and mild) internet user. Similar results to the current study were found in a study conducted by **Rajeswari et al. (2017)** who found that less than one quarter (22%) were normal internet user, about half (49%) of the participants were mildly addicted to the internet followed by less than one third (28.5%) moderately addicted, and the minority (0.5%) severely addicted to the internet.

Regarding the relation between the level of IA and sociodemographic data of the participants, the present study showed that there was a significant statistical difference between the level of IA and gender of the participants, while males had a significant sever level of IA compared to females. This result were in the same line with **Chi et al. (2020); Rajeswari et al. (2017); Krishnamurthy and Chetlapalli (2015); Anand et al. (2018) & Ragheb et al. (2018)**.

The current study revealed that there was a significant statistical difference between the level of IA and the faculty grade of the participants. This result was in harmony with **Abdelghani et al. (2018)** who showed that there were significant differences between the average internet user and at-risk internet users in terms of academic grade. Another result agreed with the current result was revealed by **Rajeswari et al. (2017)**. Contrary to the present study, **Ragheb et al. (2018)** in Egypt revealed there was no statistically significant association between IA and academic year of the participants.

The present study raveled that there were significant statistical differences between the level of IA and monthly family income of the participants while participants with a monthly family income ranged from 2000-3000 LE have a significant severe level of IA. The better socioeconomic status of the family may play a key role as sons are more likely to enjoy all the luxury that the world has to offer. These results agreed with **Agnihotri et al. (2019)**; **Abdelghani et al. (2018)** & **Xin et al. (2018).**

The current study revealed that there was a significant statistical difference between the level of IA and academic performance of the participants while participants whose academic performance was pass/weak had a significant severe level of IA. These results agreed with **Al-Hantoushi and Al-Abdullateef (2014)**& **Stavropoulos et al. (2013)** & **Iyitoglu and Celikoz (2017**) & **Ambad et al. (2017)**. It could be theorized that participants with high IA levels stay more time online at the expense of their study duties given the enjoyment resulting from indulging in their favorite activities. Contrary to the current result, **Usman et al. (2014)** &**Ragheb et al. (2018)** & **Kakaraki et al. (2017)** & **McCamey et al. (2015) & Najmi et al. (2014)** indicated that there was no significant relationship between IA and academic achievement among participants.

Conclusion

The majority of participants had poor IA knowledge and low HBM constructs (perceived susceptibility, perceived severity, perceived benefits, and perceived self-efficacy) toward IA except for perceived barriers. The majority had mild and moderate levels of IA and the minority had a severe IA. The study also revealed a relationship between the level of IA and gender, faculty grade, monthly family income, and academic performance of the participants.

Recommendations

(1) 1-Strategies and different treatment modalities should be developed to increase awareness and decrease the level of IA among university students. For instance, Cognitive–behavioral therapy (CBT) and motivational interviewing are suggested by several studies as an effective treatment for IA.

(2) 2-Establishing more recreational services by the university such as sports centers to participate in hobbies can be helpful to defeat feelings of isolation, boredom, and symptoms of IA withdrawal.

(3) Nurse teachers need to include the different types of addictions, such as IA, to nursing study courses, and updated education on the issue is required.

(4) 4-Further studies include the participants' families in the intervention of IA is recommended especially, for students with severe level of IA to emphasize novel methods of socialization and pleasure for the whole family to increase their activities while offline.

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