

EFFECT OF PSYCHO-EDUCATIONAL PROGRAM ON MISUSING INTERNET ADDICTION AND SELF-ESTEEM AMONG UNIVERSITY NURSING STUDENTS

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Abstract

Background Using modern technologies is a common feature of today's world. The internet has become an indispensable instrument, which often plays a key role in work-related activities. It has also become part of people's leisure time. Since the 1990s, internet addiction has attracted professionals as well as the general public across the globe. There is no uniform terminology and definition in the literature. In general, addiction to the internet is defined as excessive use of the internet, which brings psychological, social, work, or university complications to life. The aim of the study was to investigate the relationship of internet addiction with self-esteem within nursing students. **Aim:** This study aimed to investigate the effect of Psychoeducational Program on Misusing Internet Addiction and Self-Esteem among University Nursing Students. **Design:** A quasi-experimental (study and pre/post-test) design included 226 university nursing students with internet addiction and low self-esteem Faculty of Nursing / X. **Tools for data collection:** **1)** Socio-demographic questionnaire, **2)** Internet Addiction Scale, **3)** self-esteem Scale. **Results:** A significant negative relationship was found between age, self-esteem, and internet addiction among social network users. A significant positive correlation total score internet addiction scale and total score of self-esteem scale form of the studied nursing students pre-and post-educational program **Conclusions:** Implementation of Educational program had positive effect on reducing internet addiction and enhance self-esteem among university nursing students. Furthermore, there was a highly statistically significant correlation between the two studied variables among university nursing students. **Recommendations** Further research is needed to investigate the socio-cultural circumstances that may hinder or enhance an individual be self-esteem.

Keywords: Internet Addiction, Self-Esteem, Educational Program.

INTRODUCTION

Internet Addiction Disorder (IAD) is characterized by over the top or ineffectively controlled distractions, inclinations, or behaviors with respect to computer utilize and Web get to that lead to disability or trouble. Studies within the Joined together States and Europe have demonstrated predominance of between 1.5% and 8.2%, with changing demonstrative strategies between countries ⁽¹⁾.

Over the top internet utilize, which is additionally called uncontrolled utilize of the internet, obsessive internet utilize, net habit or internet compulsion, causes issues at work and in

social life, internet compulsion is for the most part characterized as a wild crave to utilize the internet, the cheapening of time went through without interfacing to the internet, intense nervousness and hostility within the occasion of hardship, and dynamic disintegration of social and family life ⁽²⁾.

According to the WHO, puberty keeps going until the age of 19, the conclusion of which coincides with the starting of college thinks about. This college organize will cause changes in social connections and within the way they carry on, which they must know how to oversee in arrange to develop behaviors that don't create dangers for their mental health ⁽³⁾.

Self-esteem is a person's mental characteristic that can be portrayed as a self-evaluation of one's picture and portion of the self-concept made up of the positive terms that individuals utilize to portray themselves. Concurring to Rosenberg, self-esteem has continuously been closely connected to physical and mental variables and behavior issues.

Essentially, self-esteem may have a critical effect on pre-adult IA. Particularly, young people who have mood self-esteem in common need self-confidence and maintain a strategic distance from intuitive with others within the genuine world. They incline toward communicating online to keep their certainty intaglio, hence developing their reliance on the internet ⁽⁴⁾.

SIGNIFICANCE OF THE STUDY

Internet addiction has ended up a genuine issue that adversely influences understudies of the College of Nursing, as more than 40.7% of understudies have an enslavement to the Internet. Of these, 2.2% had a serious habit and 38.5% had a direct Internet compulsion. All inclusive, and normal of 2-5 million Internet addicts per 50 million standard clients has been evaluated. In other words, approximately 5 to 10 percent of Internet clients have IA in a ponder of X college understudies, 9.7% of respondents.

They were dependent to the Internet ⁽⁵⁾. The relationship between self-esteem and internet addiction can be a vital figure in understanding the relationship between self-esteem and mental wellbeing.

The relationship among addictive of internet, lower self-esteem, and internet compulsion has been well-established, Nursing understudies are the foremost utilized categories of the internet which leads to an unsettling influence their social and individual relationship and influences their self-esteem ⁽⁶⁾.

Therefore, the present study is an attempt to introduce a save and reasonable educational program for university nursing students to reduce internet addiction and enhance self-esteem. A significant relationship was found between internet addiction and common psychopathology and self-esteem. This result appears that psychopathology and self-esteem must be taken into thought as imperative parameters in approach to internet addiction

SUBJECTS AND METHODS

Aim of the Study:

The current study aimed to evaluate the effect of Psychoeducational Program on Misusing Internet Addiction and Self-Esteem among University Nursing Students This aim was achieved through:

- 1) Assessing the levels of internet addiction among university nursing students
- 2) Assessing the levels of self-esteem among university nursing students.
- 3) Developing the psychoeducational nursing program for university nursing students to reduce internet addiction and enhance self-esteem.
- 4) Implementing the psychoeducational nursing program for university nursing students to reduce internet addiction and enhance self-esteem.
- 5) Evaluating the psychoeducational nursing program for university nursing students to reduce internet addiction and enhance self-esteem.

RESEARCH HYPOTHESIS:

The Psycho-educational interventions program will have positive effect on reducing internet addiction and enhance self-esteem among university nursing students.

OPERATIONAL DEFINITIONS:

Self-esteem is an individual psychological trait that can be described as a self-evaluation of one's image and part of the self-concept made up of the positive terms that people use to describe themselves.

Internet Addiction Disorder (IAD) is characterized by excessive or poorly controlled preoccupations, urges, or behaviors regarding computer use and Internet access that led to impairment or distress.

Psychoeducation is a therapeutic approach under which the psychological practitioner's functioning is viewed not in terms of abnormality (or illness) diagnoses prescription therapy, cure; but rather in terms of client dissatisfaction (or ambition) goal-setting, skill-teaching, satisfaction or goal achievement.

RESEARCH DESIGN:

A quasi-experimental (one group pre/post-test) design was used to explore the effect of educational programs on reducing internet addiction and enhance self-esteem among university nursing students.

Study Setting:

This study was conducted in the Faculty of Nursing / Ain Shams University, Cairo, Egypt.

Subject:

A purposive sample of 226 all the students nursing in the first semester of four years from the scholar year 2023/2024.

Inclusion criteria:

- Both sexes of students (male & female).
- Students of the fourth year.
- The student who agrees to participate

Sample size

Study subjects include a representative of total students in Faculty of Nursing, Fourth division (N=550) at X, during the period 2024.

Based on sample size equation 226 student's will be participated in the study. So, the sample size was calculated by adjusting the power of the test to 80% and the confidence interval to 95% with margin of error accepted adjusted to 5% and a known total population of 226 students' using the following equation:

- Type I error (α) = 0.05
- Type II error (B) = 0.2
- With power of test 0.80

$$n = \frac{N \times p(1-p)}{\left[\left[N - 1 \times (d^2 \div z^2) \right] + p(1-p) \right]}$$

$$226 = \frac{550 \times 0.50(1-0.50)}{\left[\left[550 - 1 \times (0.05^2 \div 1.96^2) \right] + 0.50(1-0.50) \right]}$$

N= Community size

z= Class standard corresponding to the level of significance equal to 0.95 and 1.96

d= The error rate is equal to 0.05

p= Ratio provides a neutral property = 0.50

Data Collection Tools:

The following five tools were used to collect data:

1) Tool I Socio-demographic questionnaire

It was developed by the researcher in Arabic language for gathering data to elicit data about socio-demographic characteristics of students such as (age, sex, academic year, residence, family monthly income, etc.).

2) Tool II: Internet Addiction Scale:

This scale was designed by Sermany, (2011) ⁽⁷⁾ and adopted by Ashraf, et al., ⁽⁵⁾ to assess internet addiction among nursing university students. It consists of (60) items, divided into six sub scales as the following: Excess use (10 items), social media (10 items), mood symptoms for reliability (10 items), health problems (10 items), social problems (10 items), withdrawal symptoms (10 items) and it is rated on 3. Point Likert scale format ranged from Yes (3), Sometimes (2) and No (1).

Scoring system

The scale has 60 items that scored according to Likert scale into 3 dimensions as yes, sometimes and no. an answer with yes takes 3, sometimes takes 2 while no takes 1. After that the total score is the sum of all items and categorized it into three levels as the following:

- Mild 1-> 60
- Moderate 60- >120
- Severe 120->180

Tool III: Self-esteem scale:

This scale it was developed by ⁽⁵⁾ to assess level of self-esteem regarding internet addiction among nursing university students.

Scoring:

The scale has 20 items that scored according to Likert scale into 3 dimensions as yes, sometimes and no. an answer with yes takes 3, sometimes takes 2 while no takes 1. After that the total score is the sum of all items and categorized it into three level as the following:

- Low 1-> 20
- Moderate 20- >40
- High 60 and more

Operational Design

The operational design for this study included the preparatory phase, pilot study, fieldwork, and ethical considerations.

Preparatory phase:

This phase was carried out through the following steps: 1- The study tools were designed and translated into Arabic language by language experts and back translated to ensure its accuracy. 2- Outlining all areas to be included in the Psycho-educational Program and the booklet through extensive review of the literature and other available resources. 3- Designing the Psycho-educational Program, preparation of its content and developing the Psycho-educational Program. 4- Obtaining experts opinion to ensure booklet's validity.

Tool validity and reliability:

The tool is valid and standardized and not need to modification and Cronbach's Alpha was used to determine the internal reliability of the tool.

Pilot Study:

A pilot study was undertaken after the adaptation of the tools and before starting the data collection. It was conducted on (10%) preparatory university nursing students with internet addiction and decrease of self-esteem.

The purpose of the pilot study was to test the applicability, feasibility, and clarity of the tools. In addition, it served to estimate the approximate time required for interviewing the family caregivers as well as to find out any problems that might interfere with data collection. After obtaining the result of the pilot study, the necessary modifications of tools were done, then final format was developed under the guidance of supervisors.

Fieldwork:

The collection of data and application of Psycho-educational Program lasted over a period of six months; starting at October 2023 and ending in March 2024, through the following phases:

Assessment and planning phase

- ☐ The researchers attended the Faculty of Nursing x 3 days per week (9.00 am to 2.00 pm).
- ☐ The nursing students who fulfilled the inclusion criteria were selected.
- ☐ The researchers obtained the nursing students' written consent for participating in this study after explaining the aim of the study.
- ☐ Filling in the previously mentioned tools was done by the researchers before implementation of the program.
- ☐ These tools were completed within an average time 60-90 minutes.
- ☐ All information collected through data collection tools were interpreted for identifying individualized teaching needs.
- ☐ The researchers set up program plan covering all objectives. These objectives were categorized into general and specific objectives.
- ☐ The program resources and facilities were allocated (printed material and location of session that best serve the learners).
- ☐ The researchers determined the timetable of sessions, teaching methods, media used and learner's activities.
- ☐ After data collection, the appointment for starting program sessions was detected and scheduled with the nursing students for the following weeks.

Implementation phase

- The program sessions were conducted a classroom located at the first floor of the faculty of nursing Ain Shams University were conditioned, quiet, had adequate lighting, well ventilated and furnished, and had adequate spacing for the place for implementing psychoeducational program activities.
- Total number of the sessions of counselling intervention was 10 sessions. Each session of them had taken one and half hour/ day for 3 days per week.
- These sessions were conducted for group; each group number didn't exceed 40 students. The booklet was given for every student.
- Implementation of psychoeducational program lasted over a period of 6 months for all students.
- Each session started by greeting the students, assessing students' motivation for learning, getting feedback about what was given through the previous session and present the objectives of the new topic were taking into consideration using clear language to suit the educational level of the nursing students.
- At the beginning of the first session an orientation of psychoeducational program and its purpose took place. The importance and benefit of psychoeducational program were explained to the nursing students to motivate them to follow psychoeducational program, which included in it.
- The researchers emphasized the importance of adherence to each step of psychoeducational program, and the rationale for and the benefit of engaging in each new behavior was explained. The researchers encouraged patients to express their readiness for changing the behavior.
- Motivation, problem solving, and reinforcement techniques were used to enhanced active participation of the nursing students in the psychoeducational program sessions.
- The first psychoeducational program sessions included Introductory session. The second psychoeducational program session included Knowledge about internet addiction session. The third psychoeducational session included Impact of Internet Addiction Session. The fourth psychoeducational session included Coping Strategies Session The fifth psychoeducational session included Stress Management Session. The sixth psychoeducational program session included Psychosocial Support Development Skills Session; the seventh psychoeducational program session included Time Management Session; the eighth psychoeducational program session included Anger Management Session, the ninth psychoeducational program session included peer relationships skills, the tenth psychoeducational program session included problem-solving skills &Evaluation Session,

Evaluation phase

Evaluation of outcome of the program was carried out by the researcher immediately after implementation of the program (post- test) to estimate the effect of psychoeducational program on burdens and coping patterns among university nursing students to reduce internet addiction and enhance self-esteem.

Ethical Considerations:

The ethical research considerations in the study included the following:

- The research approval with code study number obtained 24.02.233 from the ethical committee in faculty of nursing, Ain Shams University before starting the study.
- The researchers clarified the objectives and aim of the study to sample before obtaining their consent to participate in the study. The researchers assured maintaining anonymity and confidentiality of subjected data. Nursing students were informed that they are allowed to choose either to participate or withdraw from the study at any time.

Values, cultures and benefits were respected.

Administrative Design

An official letter of approval was obtained from Dean of faculty of nursing, Ain Shams University, include the aim of the study and steps of the educational program, to the get permission to conduct the study.

Statistical Analysis:

Recorded data were analyzed using the statistical package for social sciences, version 22.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean $\pm$ standard deviation (SD). Qualitative data were expressed as frequency and percentage.

- **Chi-square (χ^2) test** of significance was used in order to compare proportions between qualitative parameters.
- **Pearson's correlation coefficient (r) test** was used to assess the degree of association between two sets of variables
- **Multiple linear regressions:** It is used to test and estimate the dependence of a quantitative variable based on its relationship to one or more independent variables.
- The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following: **Probability (P-value)**
 - P-value ≤ 0.05 was considered significant.
 - P-value ≤ 0.001 was considered as highly significant.
 - P-value > 0.05 was considered insignificant.

RESULTS

Table 1: Number and percentage distribution of the studied nursing students according to their socio-demographic data (N=226).

Socio-demographic data	No.	%
Age "years"		
20-21 years	111	49.1
22-23 years	115	50.9
Mean±SD	21.65±0.89	
sex		
Male	73	32.3
Female	153	67.7
- School stage:		
Stage I	-	-
Stage II	-	-
Stage III	-	-
Stage IV	226	100.0
Previous academic year estimate:		
Excellent	85	37.6
Very good	131	58.0
Good	10	4.4
Social status		
Single	219	96.9
Married	7	3.1
Do you live in a companionship?		
Parents	214	94.7
Father	2	.9
Mother	10	4.4
Residence:		
University City	21	9.3
In the parents' home	196	86.7
Friends, I am an expatriate	9	4.0

Table (1): Represents that more than half of the studied nursing students 50.9% were between ages 22-23 years with mean 21.65±0.89 of age. As regards gender, more than two thirds of them 67.7% were females. Almost all of the studied nursing students 100% were in stage four of school stage. More than half of them 58% were a very good estimation of previous academy of the studied nursing students. Most of the studied nursing students 96.9% were single. Most of them 94.7% were lived with their parents and the majority of the studied nursing students 86.7% were living at their parents' home.

Table 2: Number and percentage distribution of the studied nursing students according to their level of total internet addiction level about excess use of (pre and post) (N=226).

Internet addiction scale	Pre-educational program		Post -educational program		Pre-Post	
	No.	%	No.	%	x ²	p-value
Mild	62	27.4	91	40.2	27.687	<0.001**
Moderate	66	29.2	89	39.4		
Severe	98	43.4	46	20.4		
Total	226	100.0	226	100.0		

Using: Chi-square test `p-value >0.05 NS; *p-value <0.05 S; **p-value <0.001 HS

Table (2): Indicates that less than half of the studied nursing students 43.4% were severe level of total internet addiction scale pre-educational program implementation which decreased to about less than one quarter 20.4% post-educational program implementation, while, less than one third of them 29.2% were moderate level of total internet addiction scale pre-educational program implementation which increased to more than one third 39.4% post-educational program implementation. More than one quarter of them 27.4% were mild level of total internet addiction scale pre-educational program implementation which increased to less than half 40.2% of them post-educational program implementation. This table also shows that there was highly statistically significant relation between level of total internet addiction scale and the studied nursing students pre- and post-educational program implementation p-value <0.001.

Table 3: Number and percentage distribution of the studied nursing students according to their level of total self-esteem scale of (pre and post) (N=226).

Self-esteem scale	Pre-educational program		Post -educational program		Pre-Post	
	No.	%	No.	%	χ^2	p-value
Low	124	54.9	39	17.3	78.107	<0.001**
Moderate	62	27.4	78	34.5		
High	40	17.7	109	48.2		
Total	226	100.0	226	100.0		

Table (3): Illustrates that more than half of the studied nursing students 54.9% were had low level of total self-esteem pre-educational program implementation which decreased to the minority of them 17.3% post-educational program implementation, while, less than one third of them 27.4% were moderate level of t of total self-esteem pre-educational program implementation which increased to more than one third 34.5% post-educational program implementation. The minority of them 17.7% were had high level of t of total self-esteem pre-educational program implementation which increased to less than half 48.2% of them post-educational program implementation. This table also shows that there was highly statistically significant relation between level of total self-esteem and the studied nursing students pre and post-educational program implementation p-value <0.001.

Table 4: Number and percentage distribution of the studied nursing students according to their self-esteem scale for undergraduate nursing students according to their history of internet use at pre (N=226).

History of internet use	Level of Self-esteem scale						Chi-square test	
	Low (n=124)		Moderate (n=62)		High (n=40)			
	No.	%	No.	%	No.	%	x2	p-value
Since when you started using the Internet								
A week: 4 weeks	1	0.8	0	0.0	6	15.0	23.031	<0.001**
1<12 months	3	2.4	0	0.0	0	0.0		
1-<3 years	7	5.6	9	14.5	11	27.5		
3-<5 years	24	19.4	7	11.3	8	20.0		
≥5 years	89	71.8	46	74.2	15	37.5		
What are the reasons for using the Internet continuously								
Access to academic references	77	62.1	37	59.7	26	65.0	0.295	0.863

Spending spare time	64	51.6	33	53.2	14	35.0	3.918	0.141
Curiosity	51	41.1	14	22.6	12	30.0	6.689	0.035*
Communicating with others	80	64.5	37	59.7	24	60.0	0.531	0.767
Playing games	37	29.8	23	37.1	7	17.5	4.482	0.106
The number of hours you spend using the Internet for purposes not related to research and study per day in hours								
Less than an hour	14	11.3	6	9.7	6	15.0	8.945	0.011*
From 1 hour to 3 hours	55	44.4	30	48.4	26	65.0		
From 3 to 6 hours	36	29.0	20	32.3	3	7.5		
More than 6 hours	19	15.3	6	9.7	5	12.5		
Which websites you like to visit daily (more than one answer can be used)								
Scientific	70	56.5	38	61.3	23	57.5	0.401	0.818
Literary	17	13.7	5	8.1	6	15.0	1.519	0.468
Entertainment and games	79	63.7	44	71.0	25	62.5	1.155	0.561
Online Chat	68	54.8	22	35.5	18	45.0	6.357	0.042*
Sensationalism	2	1.6	0	0.0	0	0.0	1.660	0.436
News	28	22.6	10	16.1	11	27.5	1.982	0.371
Download shows and movies	62	50.0	12	19.4	12	30.0	17.804	<0.001**
What is the reason for using these websites daily (more than one answer can be used)								
Ease of access to the Internet	104	83.9	54	87.1	35	87.5	0.517	0.772
Low cost	37	29.8	21	33.9	12	30.0	0.336	0.845
The possibility of anonymity, electronic chats	5	4.0	0	0.0	8	20.0	19.438	<0.001**

Table (4): Clarifies that, there was a highly significant statistically relations between starting using the internet, downloaded shows and movies, the possibility of anonymity, electronic chats of the studied nursing students and their self-esteem scale pre-educational program p-value <0.001, while, there was a significant statistically relations between curiosity, the number of hours were spending using the internet, online Chat of the studied nursing students and to their self-esteem pre-educational program p-value <0.05.

Table 5: Correlation between total score internet addiction level and total score of self-esteem scale form for undergraduate nursing students.

		Total score of internet addiction level	
		Pre	Post
Total score of self-esteem scale	r	0.186	0.496
	p-value	0.582	<0.001**

Table (5): Reveals that there was positive correlation total score internet addiction scale and total score of self-esteem scale form of the studied nursing students pre-and post-educational program with p-value <0.001.

DISCUSSION

Regarding socio-demographic data represents that more than half of the studied nursing students were between ages 22-23 years with mean 21.65 ± 0.89 of age. From the researcher point of view, this result may be due to all study sample were in fourth grade at school of nursing and some of them joined faculty of nursing after graduation of

technical nursing institute. These results in the same line with **Saied et al.** ⁽⁸⁾ who conducted in the study entitled: "Influences of Internet Addiction on Academic Achievement among Technical Health Institute Nursing Students." and found that more than half of the students their age ranged between 18- < 20years and less than one third of students were in the fourth year. These results disagreed with **Acharya et al.** ⁽⁹⁾, who stated in the study entitled:" Internet Addiction and Its Associated Factors among Undergraduate Students in Kathmandu, Nepal "that more than two third of the undergraduate students' age were >20 years.

These results incongruent with **Soni, (2020)** ⁽¹⁰⁾ who stated in the study entitled:" Comparative evaluation of internet addiction amongst arts, commerce, engineering and medical students" that the variables were assessed Majority of the students in the current study were in an age group 17-20 years. As respects sexual orientation, more than two thirds of them were females. From the analyst point of see, this result may be due to female tending to connect staff of nursing more than male as the workforce of nursing given nursing understudies with business chances, subsequently accomplishing financial welfare and concurring to community conventions which appointed duty of family part caring to females.

These comes about within the same line with **Milková et al.** ⁽¹¹⁾ who stated in the study entitled: "Internet addiction in university students–Czech study." Found that more than two thirds of the undergrad think about understudies were females. Additionally, these results are in the same line with **Saffari et al.** ⁽¹²⁾ who stated in the study entitled: "Adolescent internet addiction in Hong Kong" prevalence, psychosocial correlates, and prevention" and found that majority of participants were female. Hand, this result is in disagreement with **Osorio-Molina et al.,** ⁽¹³⁾ who stated a study entitled "Smartphone addiction, risk factors and its adverse effects in nursing students" and reported that majority of the undergraduate studied students were male.

According to level of total internet addiction scale about excess use of (pre and post), that less than half of the studied nursing students were severe level of total internet addiction scale pre-educational program implementation which decreased to about less than one quarter post- educational program implementation. Less than one third of them were moderate level of total internet addiction scale pre- educational program implementation which increased to more than one third post- educational program implementation. More than one quarter of them were mild level of total internet addiction scale pre- educational program implementation which increased to less than half of them post- educational program implementation. From the researcher point of view, this may be due to the obvious effect of educational program in reducing addictive behavior.

This result was supported with **Khosravi, et al.,** ⁽¹⁴⁾ who conducted a study entitled " Personality traits and college students' internet addiction: The mediating roles of general health and self-esteem" and found that nearly half of their studied students had moderate level of internet and social media addiction preprogram implementation and more than half of them had excessive level of addiction preprogram which improved post program

implementation, and nearly half of their participants had a low level of addiction post program implementation.

Concerning to the level of add up to self-esteem level of (pre and post) more than half of the considered nursing understudies were had moo level of add up to self-esteem pre-instructive program usage which diminished to the minority of them post- instructive program usage, less than one third of them were direct level of t of add up to self-esteem pre- instructive program execution which expanded to more than one third post-instructive program execution. The minority of them had a tall level of add up to self-esteem pre- instructive program usage which expanded to less than half of them post-instructive program execution.

From the researcher's point of view, this may be due to Self-esteem is an internal feeling that has to do with how someone feels about themselves emotionally. Additionally, undergraduate students express themselves differently when they use various dating services, social networking sites, and profiles, thus, they present themselves in a way that fits their self-concept.

However, they feel somewhat satisfied by it, and occasionally they enjoy telling lies to themselves in order to feel better about themselves. They attempt to obtain those items in this method that they are unable to locate in the actual world. On the other hand, it can be argued that receiving praise from others increases their internet addiction and boosts their self-esteem pre- educational program, while, elevate the level of self-esteem post educational program may be due to the positive effect of educational program in increasing level of students' self-esteem sessions.

This result was supported with **Thakur et al.** ⁽¹⁵⁾, who conducted a study entitled " Internet Addiction, Shyness, and Self-esteem of Pakistani Youth " noted that students with low self-esteem spend much time on social networking than students with high self-esteem, however, self-esteem is a moderator of the relationship between the use of social media and bridging social capital activities.

From the researcher point of view, this may be due to the immediate effects of an educational program on internet addiction may be evident; the ultimate goal is to promote long-term behavior change and sustainable habits. Educational programs that emphasize ongoing self-monitoring, goal-setting, and prevention of relapse strategies can support nursing students in maintaining healthy internet use patterns over time. On the other hand; the educational program incorporated peer support mechanisms, such as group discussions, peer mentoring, or accountability partnerships, that can provide students with social support and encouragement to make positive changes in their internet use habits. Peer interactions can foster a sense of camaraderie and mutual accountability, motivating students to adhere to healthier online behaviors. This result was supported with **Salehi et al.** ⁽¹⁶⁾, who conducted a study entitled "Impulsivity, Inhibition, and Internet Addiction in Medical Students of North of Iran" that student who used social network sites to create a social environment and make new friends were observed to have statistically significantly higher Internet Addiction Scale scores than those who did not pursue such aims ($P < .05$; $P < .01$).

Concerning the relation between socio-demographic data of the studied nursing students and total levels of self-esteem scale pre-educational program, there was a significant statistically relations between age, the previous academic year estimate, live in a companionship, of the studied nursing students and their total levels of self-esteem scale pre-educational program p -value <0.05 .

From the researcher point of view, this may be due to as regards according to age; older nursing students may have more life experience, maturity, and confidence, which could positively influence their self-esteem levels. Additionally, older students may have developed better coping strategies and self-awareness over time, leading to higher levels of self-esteem compared to younger students.

Regarding previous academic year estimate; students who performed well academically in previous years may have a greater sense of academic competence and achievement, contributing to higher levels of self-esteem. Academic success can bolster students' confidence in their abilities and positively impact their overall self-esteem.

Regarding living in companionship; nursing students, who live in companionship, such as with family, friends, or romantic partners, may experience greater social support, acceptance, and validation, which can enhance their self-esteem. Positive social relationships provide a sense of belonging and connectedness, fostering feelings of self-worth and acceptance.

Concerning the relation between socio-demographic data of the studied nursing students and total levels of self-esteem scale post- educational program, there was a significant statistically relations between age, social status of the studied nursing students and their total levels of self-esteem scale post-educational program p -value <0.05 .

From the researcher point of view, this may be due to interplay between age, academic performance, living situation, and self-esteem levels among nursing students can inform the educational program and support strategies which aimed at promoting positive self-esteem and overall well-being. By addressing factors that contribute to low self-esteem and enhancing protective factors that support positive self-esteem, nursing programs can empower students to thrive academically, professionally, and personally. These results in the same line with **Zhihao et al.** ⁽¹⁷⁾ who stated in the study entitled: "The Influence of Physical Activity on Internet Addiction among Chinese College Students" that the implementation of physical activity can significantly and positively predict the degree of self-esteem ($B=0.22$, 95% confidence interval of $P<0.01$).

Concerning the relation between history of internet use of the studied nursing students and self-esteem scale pre- educational program, there was a highly significant statistically relations between starting using the internet, downloaded shows and movies, the possibility of anonymity, electronic chats of the studied nursing students and their self-esteem scale pre- educational program p -value <0.001 , while, there was a significant statistically relations between curiosity, the number of hours were spending using the internet, online Chat of the studied nursing students and to their self-esteem pre-educational program p -value <0.05 .

From the researcher point of view, this may be due to as regards; starting to use the internet that the age at which nursing students started using the internet may influence their self-esteem. For example, students who started using the internet at a younger age may have greater familiarity with online platforms and social interactions, leading to higher levels of self-esteem related to their digital literacy and adaptability.

According to downloading shows and movies that engaging in activities such as downloading shows and movies may provide a source of entertainment, relaxation, and social connection for nursing students. Accessing a wide range of media content online can contribute to feelings of enjoyment, fulfillment, and cultural engagement, which may positively impact self-esteem.

As regards possibility of anonymity; that the ability to maintain anonymity while engaging in online activities, such as browsing websites or participating in forums, may influence nursing students' self-esteem. Anonymity can provide a sense of freedom, privacy, and self-expression, allowing individuals to explore interests, share opinions, and seek support without fear of judgment or social repercussions.

Regarding the electronic chats; participating in electronic chats as messaging apps, online forums, or social media platforms, can facilitate social interaction and connection among nursing students. Engaging in electronic chats may foster a sense of belonging, camaraderie, and social support, which are important factors for promoting positive self-esteem and well-being.

Regarding interplay of factors; it's possible that there are complex interactions among these internet usage behaviors and preferences that collectively influence nursing students' self-esteem levels. For example, students who started using the internet at an early age may be more likely to engage in electronic chats and download media content, which could have cumulative effects on their self-esteem over time.

As regards psychological mechanisms; beyond the direct effects of internet usage behaviors, there may be underlying psychological mechanisms at play that mediate the relationship between these factors and self-esteem. For example, feelings of social connectedness, perceived social support, and self-disclosure in electronic chats may enhance self-esteem among nursing students. These results disagreed with **Blachnio et al.** ⁽¹⁸⁾, who stated in the study entitled: "Relations between Facebook Intrusion, Internet addiction, life satisfaction, and self-esteem" that Facebook intrusion was associated with greater life satisfaction. There are some possible explanations for this, when a person is beginning to use Facebook, this activity can be connected with higher life satisfaction, and satisfaction decreases with the increasing frequency of usage. He found Internet addiction to be associated with lower life satisfaction and self-esteem.

Concerning the connection between history of web utilize of the considered nursing understudies and self-esteem scale post- instructive program, there was a profoundly noteworthy factually relations between online chat, moo fetched of the considered nursing understudies and to their self-esteem post- instructive program $p\text{-value} < 0.001$, whereas, there was a noteworthy factually relations between playing diversions, Emotionalism,

news of the examined nursing understudies and to their self-esteem post- instructive program p-value <0.05..

From the researcher point of view, this may be due to understanding how internet usage behaviors and preferences relate to self-esteem among nursing students can inform interventions and support strategies aimed at promoting positive online experiences and well-being. By fostering healthy internet habits, encouraging positive social interactions, and addressing underlying psychological needs, through the nursing educational program can empower students to develop resilience and thrive in both online and offline environments. These results in the same line with **Zhihao et al.** ⁽¹⁷⁾ who stated in the study entitled: "The Influence of Physical Activity on Internet Addiction among Chinese College Students" that Physical activity can not only directly reduce college students' internet addiction, but also indirectly affect their internet addiction by moderating their self-esteem, where self-esteem plays a mediating role between physical activity and college students' internet addiction.

Concerning correlation between total score internet addiction scale and total score of self-esteem scale there was positive correlation total score internet addiction scale and total score of self-esteem scale form of the studied nursing students pre-and post- educational program with p-value <0.001. From the researcher's point of view, this may be due to the fact that as internet addiction increases, self-esteem tends to decrease, and vice versa. However, the positive correlation between internet addiction and self-esteem scores post-educational program may highlight that nursing students with lower levels of internet addiction are associated with a higher level of self-esteem post-educational program. These results in the same line with **Ashraf et al.** ⁽⁵⁾, who stated in the study entitled: "Relationship between Internet Addiction and Self-Esteem among University Nursing Students" that there was a highly positive correlation between level of internet addiction and level of nurse students' self-esteem among nurse's students under study, this result is my due to social self-esteem and home-family self-esteem significant predictors of internet addiction.

This result was incongruence with **Collates et al.** ⁽¹⁹⁾ who conducted a study entitled "Social Media Addiction and its relationship With Self-esteem in University Students. " And found that the correlation between self-esteem and addiction to social networks, in the dimension of occupation there is a negative correlation with a p-value of -0.281 indicating that the more social networks are used the less time is spent on other activities of daily living; in terms of mood modification there is a negative correlation with a p-value of -0.402 showing that the lower the self-esteem presented when using social networks there is an improvement in mood.

Concerning relations between best fitting multiple regression models for predictors of the studied nursing students and internet addiction scale, there was a highly significant statistically relations between best fitting multiple regression models for predictors of the studied nursing students' the previous academic year estimate and internet addiction scale p-value <0.001, while, there was a significant statistically relations between started using the Internet, reasons for using the Internet continuously, number of hours you spend

using the Internet, websites liked to visit daily, the reason for using these websites daily and internet addiction scale p -value <0.05 .

From the researcher's point of view, this may be due to that academic performance in the previous year is strongly associated with internet addiction the regression model may reveal underlying factors that contribute to both academic performance and internet addiction among nursing students such as; procrastination, time management skills, motivation, and self-regulation may influence both academic outcomes and internet use behaviors. This result was incongruence with who conducted a study entitled "Social Media Addiction and its relationship With Self-esteem in University Students. " and found that P -value of -0.310 , indicating that users have little self-control in the use of social networks, which causes them to use them again and again. In the conflict dimension, a p -value of -0.386 was found, indicating a negative correlation, which means that the higher the level of addiction to social networks, the more harmful the effects on the user's lifestyle ⁽¹⁹⁾.

Concerning relations between best fitting multiple regression models for predictors of the studied nursing students and self-esteem scale, there was a significant statistically relations between best fitting multiple regression models for predictors of the studied nursing students' age, social status and self-esteem scale, while, there was a significant statistically relations between starting using the internet, reasons for using the Internet, number of hours you spend using the internet, websites liked to visit daily, the reason for using these websites and self-esteem scale p -value <0.05 .

From the researcher's point of view, this may be due to the age as a Predictor; the regression model indicates that age is a significant predictor of self-esteem among nursing students. This may be due to that older student tend to have higher levels of self-esteem compared to younger students. Possible explanations include greater life experience, maturity, and confidence that typically accompany age. Regarding social status; such as socioeconomic status, family background, and social support networks, is also identified as a significant predictor of self-esteem. Nursing students from higher social status backgrounds may have access to more resources, opportunities, and support systems that contribute to higher levels of self-esteem. This result was incongruence with **Salehi et al.** ⁽¹⁶⁾ who conducted a study entitled "Impulsivity, Inhibition, and Internet Addiction in Medical Students of North of Iran" that no significant correlation between young score in the presence of contextual indicators, including sex, age, and marital status ($p = 0.144$).

CONCLUSION

The Implementation of Educational program had positive effect on reducing internet addiction and enhance self-esteem among university nursing students. Furthermore, there were highly statistically significant correlation between the two studied variables among university nursing students.

RECOMMENDATIONS

- Incorporating the types of internet addiction into the nursing curriculum at all levels of nursing education and their implication on self-esteem. Full-day counseling programs that provide the latest information about fibromyalgia and its treatment approach to support those patients to manage their disease effectively.
 - Regular in-service training programs to be developed for nursing students to consider self-esteem skills in their personal life.
 - Conducting training courses for nursing students on self-esteem, self-search, social integration, making friendships far from the Internet, and forming friendships through, for example, the university or the college of nursing.
 - Continuous training program include students' parents and educators. This may render them more readiness to accept and support the students.
- A Further research is needed to investigate the socio-cultural circumstances that may hinder or enhance an individual be self-esteem.

DECLARATIONS

Ethical Considerations

Official approval was obtained from the scientific research ethics committee **Faculty of Nursing Ain Shams University**, REC which operated according to the guidelines of the International Council of Harmonization (ICH) and the Islamic Organization for Medical Science (IOMS) on Ain Shams university for conducting the current study **(24.02.233)**.

All methods were performed following the guidelines and regulations recommended by the Helsinki Declaration. Written informed consent was obtained from all the participants in the study. Students were informed that they were allowed to choose whether to participate or not in the study and they had the right to withdraw from the study at any time without giving any reasons. Confidentially all information was secured.

Consent for publication.

Not applicable.

Data availability:

No datasets were generated or analyzed during the current study.

Clinical trial:

Not applicable.

Availability of data and materials:

Data is available upon reasonable request from the corresponding author.

Competing interests

The authors declare no competing interests.

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Author's Contribution

Study concept and design: Ola A. Ahmed; analysis and interpretation of data: Shimaa S. Adam.; drafting of the manuscript, Ola.; Critical manuscript revision for important intellectual content: Omayma A. Osman. All authors have read and approved the manuscript.

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