

Exploring Internet Addiction among Psychiatric Nurses and its Effects on Sleep Quality and Psychological Distress

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Abstract

Background: The internet's extensive use in the twenty-first century has had a significant impact on our way of life. Despite the fact that technology has improved many aspects of our lives and is now an essential part of daily living, such as job, private life, and social interaction. **Aim:** Aim to explore internet addiction among psychiatric nurses and its effects on sleep quality and psychological distress. **Subjects and Methods:** A descriptive correlational design was employed with a purposive sample of 50 psychiatric nurses in the psychiatric department at Zagazig University Hospitals. Data collection was conducted using the Internet Addiction Test (IAT), Kessler Psychological Distress Scale (K10), and Sleep Quality Scale (SQS). **Results:** less than two thirds (62%) of nurses had severe problems related sleep quality and 28% of them had moderate problem related sleep quality. More than one third (40%) of studied nurses suffered from severe internet addiction, (44%) of them suffered from moderate internet addiction, while 8% of them had mild and normal internet addiction. **Conclusion:** The study of psychiatric nurses found that internet addiction has a positive correlation with psychological distress and sleep problems. **Recommendations:** Based on the study's findings, it appears important to implement periodic educational courses, refer them to counseling facilities, and conduct interventional studies to assess the efficiency of such programs.

Keywords: Internet addiction, Psychiatric nurses, Psychological distress & Sleep quality.

Introduction

With the rapid advancement in information technologies as well as the options it offers in areas like interactions, education and recreational activities, the internet which gives its users a variety of choices through its impact on the world has increasingly become a necessary component of life. It has beginning to play a significant role in the lives of many people due to the beneficial possibilities, fast and simple access it offers. But there are some issues when people use the Internet excessively and dysfunctionally, addiction to internet usage is one of these adverse consequences (Sagar & Zabaci, 2022). All internet users are susceptible to the effects of irresponsible use, but teenagers are especially at risk. Abuse can result from overuse, which might interfere with a person's ability to function and complete daily activities. In relation to what has been called Internet addiction (IA), certain features of using the internet are becoming more widely believed to be hazardous, and one might exhibit compulsive and addicted behavior. Internet addiction (IA) is characterized by a lack of ability to control internet usage, which impairs psychological health, controlling emotions, and interpersonal relationships (Mohamed et al., 2023). Psychological distress is a generalized negative (unpleasant) psychological condition in which people feel they are unable to handle difficult situations.

Psychological distress may be accompanied by mild to moderate symptoms of anxiety and depression, which, if left untreated, can progress to a more severe mental disorder. Psychological discomfort is influenced by sleep disorders, mental development, unmet patient demands, social support, symptom burden, and other variables (Wang et al., 2022).

Sleep is very crucial for body repair because it accounts for around one-third of human life as well as for preserving energy, memory, learning, concentration, and emotional equilibrium. Sleeping is a personal experience that is affected by a variety of things, such as age, gender, diet, and physical and mental health. Sleep quality has an impact on health, everyday function, and overall quality of life. Many Internet researches indicate that using the internet more frequently and developing an addiction to it; reduce sleep duration and quality (Çelebioğlu et al., 2020).

In research looking at factors connected to internet addiction, the interaction between mental conditions like depression, loneliness, anxiety, and stress is frequently the main focus. In addition to this, it should be highlighted that studies have looked at its physical effects, including back discomfort, migraines, Weight problems, insufficient sleep, and neurocognitive impairments are all common. Furthermore, in terms of a person's physical needs,

internet addiction can cause issues by affecting sleep quality, which is essential for overall health. Indeed, research demonstrates that internet addiction can help those with insomnia alongside other sleep issues (Sagari & Eren, 2022).

The emergence of psychological issues is among the most noticeable characteristics. It has been claimed that, internet addiction (IA) has a strong link to mental health issues like diminished levels of satisfaction with life, anxiety and mood disorders (Zhao et al., 2023).

According to a study of (Lupo et al., 2020), smartphone addiction is one of a variety of addictive behaviors that also includes moderately hazardous use of smartphones and more severe behaviors that are addictive. In such instances, the effects need to be dealt with, avoided, and perhaps even treated before the user's health is adversely affected to the point of impairment. The Italian healthcare system appears to have a very high prevalence of this dependency. These smartphones are utilized during working hours for recreational tasks including social media, gaming, and electronic research in besides clinical practice. This improper use increases the possibility of medical errors that worsen or impact patients' underlying critical health situations.

Since it improves people's health and well-being, the health profession is typically regarded as honorable. Healthcare workers' good physical and mental health, as well as their responsible use of social media and professional conduct, are crucial for both their own well-being and for delivering better healthcare to patients. When healthcare providers use the internet during their hours of work, the danger of addiction to social media (SM) significantly rises. Specifically compared to many other medical professionals, psychiatric specialists must collaborate effectively with specialists from different areas like neurological science, hormonal medicine, dietary requirements, social services, psychological sciences, and the legal system (Prasetya & Wardani, 2023).

The danger of suicides is higher, depression-related illnesses are more common, and drug abuse is more prevalent among healthcare workers than for the whole public (Tang et al., 2020).

Significance of study

Healthcare professionals have shown an increasing interest in researching internet addiction, so it is critical to comprehend its prevalence and any potential health effects in order to improve therapeutic strategies and ongoing research on this new mental health concern. Healthcare workers are a distinct group of people because modern healthcare relies heavily on the use of electronic medical records and telemedicine (especially after the COVID-19

pandemic), but it is important to distinguish between professional and personal internet use when assessing internet addiction in healthcare professionals. Recognizing and managing internet addiction in healthcare workers on time will help them perform better at work and reduce their risk of other negative mental health outcomes (Restrepo et al., 2020).

According to published research, the use of social media websites (SNS) and mobile devices by healthcare workers has increased over the previous ten years. According to the data, 87% of healthcare workers access the internet on their mobile phones while performing clinical duties. These worrying data imply that health practitioners are more likely to fall victim to internet dependency and its harmful consequences. In the end, this will have an impact on all of the professionals' private lives and how patients are treated (Sohail et al., 2020). As a result, it is only a minor beginning in examining the recently growing IA in healthcare providers. So the current study focused on investigating the internet addiction's prevalence between psychiatric nurses and its impact on their sleep quality as well as psychological distress. (Psychiatric nurses).

Aim of the study

The aim of this study was to Aim to explore internet addiction among psychiatric nurses and its effects on sleep quality and psychological distress.

Research questions

1. How common is internet addiction among psychiatric nurses at the psychiatric department at Zagazig University Hospitals?
2. Is there a link between internet addiction and psychological distress and sleep quality addiction among psychiatric nurses in Zagazig University Hospital's psychiatric department?

Subjects and Methods:

Research design:

It was decided to use a descriptive correlational design.

Study setting:

The psychiatric department of Zagazig University Hospitals was where the study was conducted. The hospital consisted of sixth floors, psychiatric department found in the fifth floor of the Zagazig University Hospitals. It consisted of wards for patients, office for the doctors and a room for nurses.

Study subjects:

A study was carried out using a non-probabilistic (purposive) sample of 50 psychiatric nurses who working at the psychiatric department in Zagazig University Hospitals, Alsharqia Governorate, Egypt.

Inclusion criteria

1. Nurses who are 20 or older.
2. Nurses who working at the psychiatric department

3. They accepted to take part in the study.
4. They have more than two years of experience working in a psychiatric department.
5. They using smart phone for more than two years.

Sample size determination:**Sampling:**

Using the Steven equation, the projected sample size is 50 psychiatric nurses at a confidence level of 95% and a precision rate of 0.05. (Steven, 2012). Since the total number of psychiatric nurses at the studied hospital was 79.

While;

P= 0.5

N= Total population

Z= Z value "1.96"

D= Standard Error

N= sample size

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

Tools of data collections:

The socio-demographic questionnaire. It was created by the investigators and includes age, gender, educational level, marital status, number of years of using a smart phone, and Years of experience working in the psychiatry department, Hearing loss as a result of phone use and visual impairment as a result of phone use

The Internet Addiction Test (IAT): It was invented by (Young, 1998). It is a scale used to assess the occurrence and severity of IA. On a five-point likert scale, there are 20 items ranging from "rarely" to "always". The items add up to a total score of 100, from which you can be classed as a regular internet user = 0-30, light internet user = 31-49, moderate internet user = 50-79, or severe internet user = 80-100. The scale was translated into Arabic by the researchers. IAT has a high level of internal consistency and retest reliability (r = 0.73 & 0.88).

Scoring system:

- Scores between 0 and 30 are regarded as representing a typical usage of the Internet
- Scores between 31 and 49 indicate a low level of internet addiction
- 50 to 79 reflect a moderate level
- and 80 to 100 show a serious dependence on the internet

Kessler Psychological Distress Scale (K10): It was created by (Kessler et al, 2003); it is a simple measure of psychological distress. The K10 scale is made up of ten questions on emotional states, each with a five-level response range. The scale was translated into Arabic by the researchers. The scale can be used as a rapid screening tool to assess distress levels. The instrument can be given to patients to complete, or the practitioner can read the questions to them. Each item is graded on a scale of one to five ('none of the time to all of the time'). The scores for the ten things are then added together. High scores

indicate a high amount of psychological distress, whereas low values indicate a low level. Cronbach's alpha coefficient for Kessler Psychological Distress Scale 0.869 (good)

Scoring system

- 10 - 19 Likely to be in good health
- 20 - 24 Likely to be under light stress
- 25 - 29 Likely to have a moderate level of stress
- A sever level of stress is likely in 30 - 50

Sleep Quality Scale (SQS): It was created by (Yi et al, 2006). The SQS, which consists of 28 measures, evaluates six aspects of sleep quality: daytime symptoms, sleep restoration, difficulties initiating and maintaining sleep, difficulty waking, and sleep satisfaction. The goal was to create a scale that could be used as a general, efficient metric for monitoring sleep quality in a variety of patient and research populations. The scale was translated into Arabic by the researchers. The difference in SQS scores between insomniacs and non-insomniacs (t = 13.8, P = 0.000) confirmed the construct validity. The significant correlation of SQS with the Pittsburgh Sleep Quality Index (r = 0.72, P = 0.000) revealed concurrent validity. Cronbach's alpha coefficient for internal consistency was 0.92 over a 2-week interval, while the correlation value for test-retest reliability was 0.81. As a result, the developed SQS was verified as a valid and reliable measure for assessing overall sleep quality.

Scoring system:

- Respondents use a four-point Likert-type scale to indicate how frequently they exhibit certain sleep patterns (0 = "few," 1 = "sometimes," 2 = "often," and 3 = "almost always"). Before tallying, scores on components 2 and 5 (repair after sleep and sleep satisfaction) are inverted.
- Total scores range from 0 to 84, with higher values indicating more severe sleep issues, which were categorized as follows:
- $\geq 60\%$ were deemed to have less severe sleep issues.
- $< 60\%$ were deemed to have a severe acute sleep issue.

Pilot study:

A pilot research was carried out on the first 11 patients in the sample. The pilot study's purpose was to identify any specific difficulties with the tools' stated clarity, feasibility, and application. The patients chosen for the pilot trial were incorporated in the main study because the assessment sheet was not changed.

Content Validity:

Three panels of professionals in the fields of psychiatry and psychiatric nursing revised the tools. To ensure the authenticity of the original translations,

each scale was translated into Arabic using the translate-back-translate method. By analyzing the internal consistency of the scales used for data collection, the pilot study evaluated the validity of the scales.

Field work:

After receiving approval to move forward with the study, the researcher introduced themselves to the psychiatric nurses, explained the nature and purpose of the study, voluntary participation and guaranteed confidentiality were ensured. The researcher also explained the study's aim, procedures, and information-gathering forms to the administrator of the psychiatric department at Zagazig University Hospitals. After receiving their oral consent, the researchers requested the nurses to complete the form while still under their supervision. The nurses answered the questions in about 40 to 45 minutes. The fieldwork for this study took place over a period of three months, starting in February, 2023 until the end of April, 2023.

Administration and Ethical consideration:

Official permissions to conduct the study was secured by submitting an official letter issued from the Dean of the Faculty of Nursing at Zagazig University to the director of psychiatric department in Zagazig university hospitals. Accordingly, approvals to conduct the study were obtained from the psychiatric department in Zagazig university hospitals director and the nursing director. The Zagazig University Faculty of Nursing's Ethics Committee gave its approval to the study idea (ID/Zu.Nur.Rec#:53). Then the researcher contacted the nurse individually and explained the purpose of the study and also the characteristics of the tool used for information assortment. Participants were aware of the study's objectives, the fact that participation was voluntary, and their freedom to withdraw at any moment and without explanation. The coding of all the information sheets further guaranteed the participants' anonymity and confidentiality.

Statistical Analysis:

Data from the study sample was updated, coded, and entered into a computer. For computerized data entry and statistical analysis, the Statistical Package for Social Sciences (SPSS) version 22 was utilized. The data was reported as frequencies, percentages, and Mean SD, with Chi-square applied to investigate the correlations between variables and their properties. A correlation coefficient, often known as a "Pearson correlation," is a numerical measure of a statistical relationship between two variables

The significance of the findings:

- With a p-value of 0.01 it is highly significant
- A p-value of 0.05 was judged statistically Non-significant at 0.05 p-value

Results**Table (1): The number and percentage distribution of the studied nurses based on their characteristics (n=50).**

Personal information	N	%
Age		
<20	2	4.0
20 - <30	35	70.0
30 - <50	13	26.0
>50	0	0
Mean (S.D) 28.07±3.54		
Gender		
Male	14	28.0
Female	36	72.0
Resistance		
Rural	22	44.0
Urban	28	56.0
Marital Status		
Single	11	22.0
Married	36	72.0
Widowed	2	4.0
Divorced	1	2.0
Educational level		
Diploma	7	14.0
High average diploma	19	38.0
Bachelor's degree of nursing	22	44.0
Master's degree	2	4.0
Years of experience in psychiatry department		
<10	39	78.0
10-15	10	20.0
>15	1	2.0
Mean (S.D) 7.10±4.03		
Monthly income		
Low	4	8
Medium	45	90
High	1	2
Number of years of using Smart Phone		
<5	4	8.0
5-10	40	80.0
>10	6	12.0
Mean (S.D) 8.58±3.83		
Hearing loss after using the phone		
Yes	16	32.0
No	34	68.0
Visual impairment after using the phone		
Yes	18	36.0
No	32	64.0

Table (2): The number and percentage distribution of the studied nurses based on their total domains of sleep quality (n=50).

Items	Sever		Moderate		Mild	
	N	%	N	%	N	%
Daytime symptoms	26	52.0	16	32.0	8	16.0
Restoration after sleep	29	58.0	14	28.0	7	14.0
Problems initiating	33	66.0	12	24.0	5	10.0
Problems at Maintaining sleep	35	70.0	13	26.0	2	4.0
Difficulty waking	29	58.0	18	36.0	3	6.0
Problems at Sleep satisfaction	34	68.0	13	26.0	3	6.0
Total	31	62.0	14	28.0	5	10.0

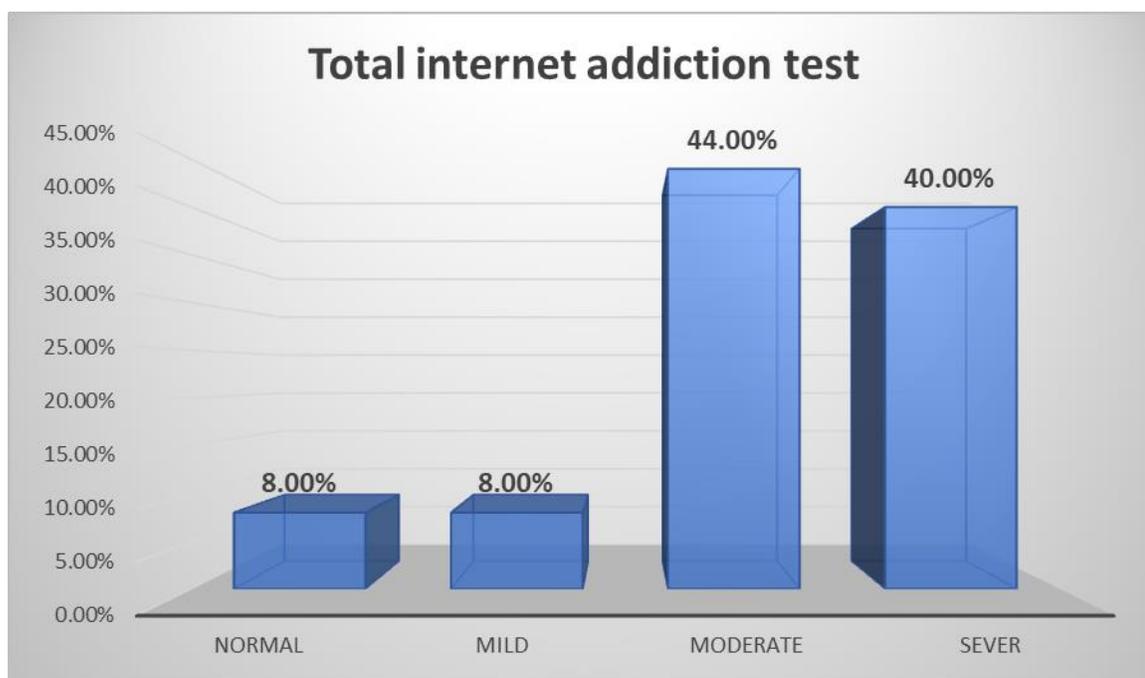


Figure (1): Percentage distribution of studied nurses related their total internet addiction test (n= 50)

Table (3): Number and percentage distribution of the studied nurses according to their total psychological distress scale (n=50).

Items	N	%
Normal	5	10.0
Mild	3	6.0
Moderate	13	26.0
Severe	29	58.0

Table (4): Relationship between socio-demographic characteristics of studied nurses' and their total sleep quality (n=50).

Items		Total sleep quality						X ²	P-Value
		Sever N= 31		Moderate N= 14		Mild N= 5			
		N	%	N	%	N	%		
Age	< 20	0	0	1	7.1	1	20.0	4.876	<0.05*
	20 - <30	21	67.7	11	78.6	3	60.0		
	30 - <50	10	32.3	2	14.3	1	20.0		
Gender	Male	11	35.5	2	14.3	1	20.0	1.009	>0.05
	Female	20	64.5	12	85.7	4	80.0		
Marital status	Single	1	3.2	7	50.0	3	60.0	3.776	<0.05*
	Married	27	87.1	7	50.0	2	40.0		
	Widow	2	6.4	0	0	0	0		
	Divorced	1	3.2	0	0	0	0		
Education level	Diploma	4	12.9	2	14.3	1	20.0	0.975	>0.05
	High diploma	14	45.2	4	28.6	1	20.0		
	Bachelor of nursing	12	38.7	7	50.0	3	60.0		
	Master's degree	1	3.2	1	7.1	0	0		
Years of experience	<10	28	90.3	8	57.2	3	60.0	1.102	>0.05
	10-15	3	9.7	5	35.7	2	40.0		
	>15	0	0	1	7.1	0	0		
Number of years of using Smart Phone	<5	0	0	3	21.5	1	20.0	6.248	<0.01**
	5-10	26	83.9	10	71.4	4	80.0		
	>10	5	16.1	1	7.1	0			

*Significant at p <0.05.

**Highly significant at p <0.01.

Not significant at p>0.05

Table (5): Relationship between socio-demographic characteristics of studied nurses' and their total internet addiction test (n=50).

Items		Total internet addiction test								X ²	P-Value
		Normal N= 4		Mild N=4		Moderate N= 22		Sever N= 20			
		N	%	N	%	N	%	N	%		
Age	<20	1	25.0	1	25.0	0	0	0	0	7.125	<0.01**
	20 - <30	0	0	1	25.0	16	72.7	18	90.0		
	30 - <50	3	75.0	2	50.0	6	27.3	2	10.0		
Gender	Male	1	25.0	2	50.0	7	31.8	4	20.0	1.228	>0.05
	Female	3	75.0	2	50.0	15	68.2	16	80.0		
Marital status	Single	1	25.0	2	50.0	5	22.8	3	15.0	2.980	<0.05*
	Married	2	50.0	1	25.0	16	72.7	17	85.0		
	Widow	1	25.0	1	25.0	0	0	0	0		
	Divorced	0	0	0	0	1	4.5	0	0		
Education level	Diploma	1	25.0	1	25.0	3	13.6	2	10.0	0.991	>0.05
	High diploma	1	25.0	1	25.0	7	31.8	10	50.0		
	Bachelor of nursing	2	50.0	1	25.0	11	50.0	8	40.0		
	Master's degree	0	0	1	25.0	1	4.5	0	0		
Years of experience	<10	2	50.0	2	50.0	18	81.8	17	85.0	0.827	>0.05
	10-15	2	50.0	1	25.0	4	18.2	3	15.0		
	>15	0	0	1	25.0	0	0	0	0		
Number of years of using Smart Phone	<5	3	75.0	0	0	1	4.5	0	0	5.876	<0.01**
	5-10	1	25.0	4	100.0	21	95.5	14	70.0		
	>10	0	0	0	0	0	0	6	30.0		

*Significant at p <0.05.

**Highly significant at p <0.01.

Not significant at p>0.05

Table (6): Relationship between socio-demographic characteristics of studied nurses' and their total psychological distress scale (n=50).

Items		Total psychological distress scale								X ²	P-Value
		Normal N= 5		Mild N=3		Moderate N= 13		Sever N= 29			
		N	%			N	%	N	%		
Age	<20	0	0	1	33.3	1	7.7	0	0	3.910	<0.05*
	20 - <30	2	40.0	2	66.7	10	76.9	21	72.4		
	30 - <50	3	60.0	0	0	2	15.4	8			
Gender	Male	2	40.0	0	0	5	38.5	7	24.1	1.001	>0.05
	Female	3	60.0	3	100.0	8	61.5	22	75.9		
Marital status	Single	2	40.0	1	33.3	4	30.8	4	13.8	1.022	>0.05
	Married	2	40.0	2	66.7	7	53.8	25	86.2		
	Widow	1	20.0	0	0	1	7.7	0	0		
	Divorced	0	0	0	0	1	7.7	0	0		
Education level	Diploma	1	20.0	0	0	2	15.4	4	13.8	0.905	>0.05
	High diploma	1	20.0	1	33.3	4	30.8	13	44.8		
	Bachelor of nursing	2	40.0	1	33.3	7	53.8	12	41.4		
	Master's degree	1	20.0	1	33.3	0	0	0	0		
Years of experience	<10	3	60.0	2	66.7	10	76.9	24	82.8	0.891	>0.05
	10-15	2	40.0	0	0	3	23.1	5	17.2		
	>15	0	0	1	33.3	0	0	0	0		
Number of years of using Smart Phone	<5	4	80.0	0	0	0	0	0	0	4.385	<0.05*
	5-10	1	20.0	3	100.0	12	92.3	24	82.8		
	>10	0	0	0	0	1	7.7	5	17.2		

*Significant at $p < 0.05$.

**Highly significant at $p < 0.01$.

Not significant at $p > 0.05$

Table (7): Correlation between studied variables

		Problems at Sleep quality	Psychological distress	Internet addiction
Problems at Sleep quality	r.		0.263	0.427
	p		.017*	.002**
Psychological distress	r.			0.281
	p			.013*
Internet addiction	r.			
	p			

(**) Statistically significant at $p < 0.01$

Table (1): The average age of nurses was 28.073.54 years, more than two-thirds were female and married, and more than one-third (44%) held a nursing bachelor's degree. In addition, the mean score of nurses' experience in the psychiatry department was 7.104.03 years, and 90% of them earned a medium monthly income. Furthermore, the mean number of years nurses had used a smart phone was 8.583.83 years. Furthermore, less than one-third (32%) of study nurses experienced hearing loss after using the phone, whereas more than one-third (36%) experienced visual impairment after using the phone.

Table (2): More than half of the nurses evaluated (52% and 58%) reported severe daytime symptoms and restoration after sleep. Furthermore, more than two-thirds (70% and 68%) of the nurses evaluated

experienced severe problems with sleep maintenance and sleep satisfaction. While more than one-third (36%) of the nurses surveyed had difficulty walking. Furthermore, less than two-thirds (62%) of nurses experienced severe problems with sleep quality, whereas 28% had moderate problems with sleep quality.

Figure (1): Revealed that more over one-third (40%) of the nurses tested had severe internet addiction, 44% had moderate internet addiction, and 8% had mild and normal internet addiction.

Table (3): More than half (58%) of nurses investigated suffered from severe psychological distress, approximately quarter (26%) suffered from moderate psychological distress, and only 10% of them had normal psychological distress.

Table (4): Indicated that there was high significant relationship between the number of years of using a smart phone and sleep quality at p value <0.01** and there was slight significant relationship between age and marital status with sleep quality at p value <0.05*. At p values greater than 0.05, there was no significant relationship between gender, education level, years of experience, and sleep quality.

Table (5): Portrayed that there was a strong significant relationship between the number of years of using a smart phone, age, and internet addiction at p value <0.01** and a weak significant relationship between marital status and internet addiction at p value <0.05*. On other hand, at p values greater than 0.05, there was no significant relationship between gender, education level, years of experience, and internet addiction.

Table (6): At p value 0.05*, there was a minor significant relationship between the number of years of using a smart phone, age, and psychological distress. Meanwhile, at p values more than 0.05, there was no significant relationship between gender, education level, marital status, years of experience, and psychological distress.

Table (7): Indicated a moderate significant relationship between sleep quality problems and psychological distress at p value 0.05*. With p value 0.05, there was a slight positive correlation between internet addiction and psychological distress. Furthermore, at p value 0.01**, there was a high positive correlation between sleep quality problems and internet addiction.

Discussion

The prevalence of internet addiction as a serious mental health issue is rising. Addiction to the internet is linked to a higher risk of several negative behavioral and mental health outcomes, including a higher chance of depressed and anxious symptoms. (El Asam et al., 2019), impaired cognitive functioning, greater level of perceived fatigue, disrupted sleep quality and reduced sleep duration (Lin et al., 2019).

This study sought to ascertain the incidence of internet addiction among nurses working in the psychiatric units of academic hospitals connected to Zagazig University as well as its relationships to psychological distress and sleep quality. Additionally, the relationship between demographic characteristics and internet addiction, stress, and sleep quality was investigated in this study.

In terms of demographic features of study participants, the current research found that the average age among nurses had been 28.073.54 decades, that over two-thirds of them were female and married, as well as that over one-third (44%) held

a college degree of nursing. These findings contradicted the findings of (Wang et al., 2022), who found that the mean ages of the 812 psychiatric nurses studied was 32.69 8.07 (range, 18-58) years, with 208 males (25.6%) and 604 females (74.4%). In terms of marriage status, 630 (77.6%) had been married, while 182 (22.4%) hadn't got married. Overall, a total of 471 people (58.0%) completed their studies with a bachelor's or higher. Additionally, according to the findings of (Umata et al., 2022), the average age of the research's respondents were 22 years, with 174 (68.8%) participating were male. The current study's findings regarding the frequency of internet use addiction between the nurses being studied showed that over one third of the respondents had a medium to severe internet dependence, just under half had moderately internet addiction, as well as the rest of the minority had little or normal internet dependency. These findings were in line with those of a study conducted by (Elbilgahy et al., 2021), which found that 42.69% of Saudi respondents had severe internet dependence (IA), and (Ibrahim et al., 2016), which found that the majority of nurses had internet addiction.

The outcomes of a study conducted by (Shekah Alothman et al., 2020) indicated that the vast majority of survey respondents had an internet dependence (IA), with only 10.9% saying they did not. These outcomes were in contrast to those findings. The findings of (Malviya et al., 2014) research, which indicated that 92.6% of university students had IAs, 64.5% of them had mild IAs, 18.6% had medium IAs, and 9.5% had extreme IAs, are consistent with this one. (Avc & Ahin., 2017) study also discovered that almost all of the nurses they investigated had internet addiction. These findings were at variance with the research conducted by (Sriati et al., 2022) which found that internet usage among teenagers was usual (51.1%) and mildly addictive (39.7%).

Additionally, (Oz et al., 2023) found that nurses become more and more addicted to the internet. Because most of the nurses in the study have been using smartphones for five to ten years, the variation in outcomes may be explained. It might also be because most of the study's nurses were female, and females might be more encouraged to use the internet because location sociocultural variables tend to encourage them to spend more time indoors compared to males.

Also, according to levels of psychological stress among studied nurses, the findings of the present research showed that over fifty percent of nurses complained of extreme psychological distress, and around a quarter were experiencing medium psychological distress. These results of this present

study corresponded with the work of (Zhao & Hu, 2023) which found that 49.6% of nursing had significant psychological distress, which is fewer compared to the results of (Lai et al., 2019). In Wuhan, 71% of nurses reported experiencing moderate to extreme psychological distress.

These findings were in contrast to a study conducted in the United States by (Mojtabai & Jorm., 2015), where 15.1% of participants reported experiencing medium psychological distress and 3.1% experienced serious distress. Furthermore, these findings were at contradiction with a study by (Viertiö, et al., 2021), which found that among working-age people, 11% of women and 8.8% of males experienced psychological distress. Along with the (Khalil et al., 2016) study, it was discovered that over two thirds (64.6%) of participants had depressive symptoms, contrasting to just 35.4% of participants who had normal symptoms. These results may be because of the different rating scales and cut-off scores used in previous studies, the reported prevalence figures of psychological distress are not directly comparable between countries.

Additionally, concerning to problems related to sleep quality, According to the current findings, in excess of a quarter of nursing reported moderate sleep-related difficulties while fewer than a two-third experienced severe sleep difficulties. The current study's findings parallel those of (Hui-ren, 2023) study, which found that a large number of nurses (n = 511; 48.20%) claimed to have bad sleep quality (PSQI > 7). Alternatively, the percentage of poor sleep quality had been greater than in studies done in the United States (66%;) (Beebe, 2017), South India (46.3%), and Turkey (61.9%) (Khade et al., 2018), which were in disagreement with the findings of the present study.

These variations may result from the different human resources, suitable facilities, and health functioning systems in this research. For instance, the majority of earlier investigations were carried out in industrialized nations. The working environment and services for nurses in wealthy nations can be higher than those in underdeveloped nations. This may also be because most developed nations have stronger fiscal resources and regulatory frameworks that support high standards of workplace health and safety measures.

Regarding relationship between internet addiction and sleep quality among studied nurses, Individuals experiencing Internet addiction considerably had poorer sleep quality, according to this study. This result is consistent with a study conducted by (Khayat, 2018) that comprised 511 people and found a link between poor sleep quality and heavy Internet use. The results of the current study and another study conducted in Canada by

(Younes, 2016) found a connection involving internet addiction (IA) and inadequate sleep.

These results may be due to that internet addiction have been shown to contribute to a distorted circadian cycle, which may have a negative impact on nighttime and sleep quality. A different reason is that smartphones produce blue light, which is known to block the pituitary gland's production of melatonin, prolonging the latency to fall asleep.

Regarding relation between internet addiction and psychological distress among studied nurses, the results of the current investigation showed a clear connection between internet dependency and psychological suffering. These findings were in line with those of study by (Saikia et al., 2019) which discovered a strong correlation between internet addiction along with stress (odds ratio: 12), depressive disorders (odds ratio: 14), as well as anxiety (odds ratio: 3.3). Additionally, study by (Desouky & Ibrahem, 2015) found a link among psychological distress with excessive use of the internet (PIU).

Furthermore, a study by (Ostovar et al., 2016) revealed that internet addiction had been an indicator of stress, hopelessness, anxiety, as well as loneliness. These outcomes could be caused by of internet addiction's detrimental effects on mood swings, tension, anxiety, and sleep patterns. The findings of the current study support those of a study conducted by (Rafiee et al., 2020) who discovered that a large proportion of students studying nursing and midwifery had moderate degrees of addiction to the internet as well as psychological stress, and that there was definitely a substantial correlation between these two factors. In a study by (Ramón-Arbués et al., 2020), it was found that anxiety, stress, and depressive disorders were all independently associated with pathological internet addiction.

The outcome of a study conducted by (Cai, et al., 2023) revealed that misuse of the internet is significantly connected to feelings of well-being, which was in agreement with the conclusions of the present research, and favorably linked to symptoms of depression, stress, loneliness, and various other negative psychological consequences. These findings may be the consequence of people's changing lifestyles and weakening social bonds as a result of internet addiction, which puts them at risk for mental problems.

Additionally, according to (Buneviciene & Bunevicius., 2021), internet addiction has been linked to a higher prevalence of adverse mental health consequences for medical workers. In addition, Liang et al. 2022 showed substantial positive associations between psychological discomfort and boredom propensity and internet addiction. In addition,

(Kargin et al., 2020) discovered that addiction grows with increased social media use, indicating that excessive usage of social media represents an additional danger to people's mental health.

Concerning to the correlation between sleep quality and psychological distress among studied nurses, the findings from the current research, there is a strong link between poor sleep quality as well as psychological problems among older people, who also have a higher likelihood of experiencing extreme psychological distress. According to research from China (Dong et al., 2017), Korea (Park et al., 2018), as well as Ethiopia (Olana et al., 2019), participants who stated that they had distress were almost three times more probable than other participants to report poor sleep quality.

The (Zhao et al., 2020) study also revealed that psychological distress was significantly influenced by sleep quality. Our results might be caused by the possibility that poor sleeping habits, such as trouble getting asleep as well as brief periods of sleep, may exacerbate mood and anxiety with daily exhaustion, which can raise psychological distress. A higher level of REM (rapid eye movement) mechanism activity may also help to explain the link between inadequate sleep and sadness and anxiety (Gamze et al., 2020). The fact that poor sleeping has negative effects on physical as well as psychological aspects of life is another plausible factor.

Regarding internet addiction and sociodemographic characteristics: among studied nurses, Furthermore, The results of the present research showed that utilizing cellphones for a rising number of years, becoming older, and being married all raise the likelihood of developing an addiction to the internet. However, there was also no apparent association between internet addiction or sex, their degree of education, or length of experience. The findings of the present investigation confirmed those of a prior study (Al Amer et al., 2020) that found no association between sex and internet addiction (IA).

Additionally, according to some research results (Arzani-Birgani, 2021) there isn't difference among the sexes with regard to the severity of IA, which is in line with the findings of the present study. According to the findings of the current study, younger individuals are substantially more likely to develop internet addiction. This result is consistent with a number of research (Ali et al., 2017) & (Lozano-Blasco et al., 2022), which indicated that IA appeared more common in young persons.

In contrast to a study conducted in India (Santanu & Supantha, 2018), the current study found no correlation between internet addiction and parental education, father's profession, geographical residence, median income, period of web use, or utilization of

the internet. Aging and length of smart phone use can have an impact on nurses' stress levels and sleep. These findings contradicted a study by (Lupo et al., 2022) which found that men had a greater degree of dependence on the internet than women had. A number of risk factors for IA, which include being younger, marital status, job kind and number of hours is working, and using the internet, are also highlighted by (Toth et al., 2021). These variations could be the result of various study designs, various assessment methods, and disparities in study nations, cultures, and ages.

Internet addiction has been shown to rise in young people who completed the study with reducing age as well as among females, opposite to the findings of the current investigation, according to a study of (Celebiolu et al., 2020). In contrast to the findings of the present research, a study undertaken for teenagers in Turkey by (Unsal et al., 2016) found no significant relationship among internet addiction along with ages and that boys were more likely to develop it than females. Girls utilize the internet far more than males because they demand greater social and psychological support, which helps to explain why such variation in the current research.

Relationship between socio-demographic characteristics of studied nurses' and their total psychological distress, according to the current study, with a p value of 0.05*, there was a slightly significant relationship between the length of years a person had been utilizing a smart phone, their age, as well as psychological distress. Sex, educational background, marriage status, period of experience, and psychological stress, however, did not significantly correlate with each other. This outcome was consistent with a research by (Nieuwoudt, 2021) which found no connection between sex and psychological distress.

The current research found a substantial connection between psychological problems and aging which was consistent with a study by (Varma et al., 2021), which found that younger pupils typically experienced greater levels of psychological distress compared to older pupils and that there were substantial variations in anxiety and depressive disorders throughout different ages. There was less psychological distress between senior university students than among younger pupils, according to previous studies (Larcombe et al., 2016) & (van Agteren et al., 2019). Additionally, this is in line with the (Burns et al., 2019) study, which found that as people aged, their mental health improved and psychological distress incidence rates decreased throughout different ages.

Based on a study conducted in (Karim et al., 2023) which was incongruent with the findings of the

present research, female students had a higher overall rate and median rating of signs of distress than male pupils and older study participants. This is contrary to other research that revealed that female students had greater rates of distress than boys did, including anxiety and mood disorders (Farrer et al., 2016) & (Sharp & Theiler, 2018).

Relationship between socio-demographic characteristics of studied nurses' and their total sleep quality among studied nurses, the present study stated revealed, at a p value of 0.05*, there existed an extremely strong association among the overall number of decades a person had been utilizing a smart phone, their age, and whether they were married. However, there wasn't no apparent association between sex, their degree of education, period of experience, and quality of sleeping. The findings of (Wang et al., 2017) study, which were congruent with the findings of the present study, showed no changes in the education level component. Chen et al., 2020, study contradicted with this finding and found that educational background and salary levels are both measures of socioeconomic status, which is directly related to living stress and the quality of sleep. Conversely to the findings of the current study, there were also no significant differences between the unmarried, married, and separated populations for the status of marriage as well. This shows that people's quality of sleep is not influenced as much by their marital status. The findings weren't consistent up with those of another study (Whinnery et al., 2014), which revealed that single people were significantly more inclined to report getting very little sleep. The fact that persons who are single, divorced, or married engage in an equivalent variety of daily activities makes it achievable. For persons of all ages, the importance of marriage is declining.

Meanwhile, (Albinsaleh et al., 2023) found that there was not a statistical distinction between those with less sleep and those with satisfactory sleep groups in terms of the country of origin, married status, place of living, occupation, income among families, or mode of transport, but there experienced substantial variation between the two categories in terms of the educational backgrounds ($p=0.035$).

Also, the findings of the present research contradicted the findings from the (Arumugam, et al. 2023) study, which found that sleeping quality was related to gender, age, country of origin, and job. Subjects who had been forty years of the old and older reported having better sleep than participants who were under than 40, men reported having better sleep versus women, and non-Arab subjects reported having higher sleep than individuals.

Limitation of study

In the current study, it was restricted to specific group of population (psychiatric nurses), the study does not envisage a comparison with other health professionals, such as, for example, hospital doctors or pharmacists. The study is limited to portions of Egypt; therefore, other sectors of Egypt should be covered in order to have a comprehensive generalization.

Conclusion

There is a high level of internet addiction among the psychiatric nurses investigated. There is a positive correlation between internet addiction and psychological distress and sleep problem among studied psychiatric nurses.

Recommendations

Considering the effects of internet addiction on nurses' sleep and psychological distress, it seems necessary to implement periodic educational courses, conduct interventional research to evaluate the effectiveness of such programs.

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