Effect of a Psycho-Educational Program on Mitigating Nomophobia and Social Media Addiction among Undergraduate Nursing Students

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Abstract

Background: Nomophobia, arising from discomfort or anxiety triggered by the inability to send or receive text messages, make phone calls, access the internet, engage with social networking platforms, or retrieve online information, is a growing concern. **Aim of the study:** This study aimed to evaluate the efficacy of a psycho-educational program on nomophobia and social media addiction among undergraduate nursing student at Mansoura University. **Research design:** Employing a nonrandomized quasi-experimental (pre-post one-group) design, the research was conducted at the Faculty of Nursing, Mansoura University, Egypt. **Sample:** A total of 260 students participated, selected through stratification based on academic year (from first to fourth year), with two clusters chosen systematically from the available lists. **Tools for data collection:** All students within the clusters partook in the psychoeducational program, completing pre- and post-intervention questionnaires encompassing demographic questionnair, the Nomophobia Questionnaire, and the Social Media Addiction Scale. **Results:** Pre-intervention, all students exhibited moderate to high levels of nomophobia. Post-intervention, these levels shifted to moderate, signifying substantial statistical disparities in overall nomophobia scores. Likewise, significant variations were observed in pre- and post-intervention regarding social media addiction scores, with this trend holding true even in a stratified analysis of variable categories. **Conclusion:** The psychoeducation program is effective to alleviate nomophobia and social media addiction among undergraduate nursing students. **Recommendations:** Incorporating interventions that address technology-related challenges into nursing education, can better prepare future nurses to manage technology-induced psychological issues, thus enhancing their overall well-being and capacity to provide holistic patient care.

***Keywords*:** Nomophobia, Nursing Students, Psycho-education, Social Media Addiction.

1. Introduction

Nomophobia (NMP) characterizes a pathological state marked by apprehension, anxiety, and distress that can even manifest physically through symptoms like palpitations, heightened perspiration, gastrointestinal discomfort, and an overwhelming sense of unease when separated from one's mobile phone. This unease might arise due to various reasons, such as a lack of signal, depleted minutes, or battery power. In some instances, individuals perceive their mobile phones as integral to their very existence. Recognized as a

hallmark of 21st-century malaise, this phenomenon is entwined with the misuse of smartphones, signifying a new-age challenge **(Sindermann, Elhai, & Montag, 2020)**. NMP, positioned as a behavioral condition, delineates a syndrome stemming from inadequate management of digital media. Four central factors contribute to this syndrome: the inability to maintain communication, disconnection, restricted access, and the willingness to forgo convenience **(Kumar et al., 2021).**

Furthermore, prominent characteristics associated with individuals experiencing nomophobia encompass spending a considerable portion of each day engaged with a mobile device, persistently carrying a charger, encountering apprehension and unease when the thought of losing their device arises, avoiding situations or locales where smartphone use is restricted, and frequently glancing at the phone's screen to check for incoming messages or calls **(Kaviani et al., 2020).**

Specifically, an array of investigations has underscored a noteworthy prevalence of NMP and social media addiction within the realm of nursing students. Consequently, these phenomena exert adverse repercussions on the mental well-being of smartphone users. Among the implications are compromised academic performance, diminished cognitive function manifested as distractibility and inattentiveness, which, in turn, jeopardize educational attainment, clinical practice, nurse-patient interactions, care quality, and even patient safety, thereby impacting overall patient outcomes **(Aarthi et al., 2020).**

Furthermore, **Shah and Sheth's** study **(2018),** demonstrated that smartphone users are predisposed to ailments such as text neck syndrome and text thumb musculoskeletal issues. Conversely, **(Cárthaigh et al., 2020)** discovered that as much as 75% of medical students grapple with NMP, experiencing genuine distress when unable to access their mobile phones. Consequently, the far-reaching impact of NMP and social media addiction is palpable across students' everyday existence, influencing their psychological, social, academic, and vocational trajectories.

Moreover, psychiatric mental health nurses (PMHNs) and other mental health care practitioners hold a responsibility to guide nursing students in comprehending the detrimental consequences of nomophobia on psychological well-being, mental health, and clinical performance, as these factors can

elevate the vulnerability to depression and anxiety **(Bhattathirippad & Patel, 2021).** It is recommended that nursing students formulate tailored strategies for managing NMP and curtailing unhealthy social media behaviors, integrating essential competencies, knowledge, and approaches rooted in motivational interviewing. Notably, PMHNs play a pivotal role in promoting health, averting issues, and proactively identifying challenges within the university student population **(Chassiakos et al., 2016).**

Awareness amongst psychiatric nurses and other healthcare professionals regarding the influential role of psychoeducation in mitigating social media addiction and nomophobia among young individuals is paramount. Psychoeducation functions as a linchpin in preserving, enhancing, and disseminating knowledge concerning nomophobia. Furthermore, devising curricula that facilitate ongoing education on nomophobia and social media addiction is another facet of effective psychoeducation **(Marletta et al., 2021)**.

Significance of the study

The prevalence of severe NMP has been extensively documented in various studies. A study conducted by **Mahgoub et al., (2019)** in Egypt revealed a high prevalence of severe nomophobia, with 47.19% of students at the Faculty of Nursing, Cairo University, experiencing severe nomophobia and 46.07% experiencing moderate levels. **Humood et al., (2021)** identified university students as particularly susceptible, reporting a severe nomophobia prevalence of 25.46%. However, **Okasha et al., (2021)** found no discernible gender difference among smartphone addicts, constituting around 59% of the sample.

Furthermore, **Almusa et al., (2019)** emphasized a nomophobia prevalence of 85.3% among students, with 22.1% exhibiting severe symptoms and 63.2% manifesting mild symptoms. Interestingly, the highest percentage of severe nomophobia was found among students of applied medical sciences, whereas students of medicine exhibited the lowest percentage (35.1% and 15.8%, respectively). Noteworthy is **Jahrami et al., (2023)** finding that 20% of individuals displayed mild, 50% displayed moderate, and 20% displayed severe nomophobia symptoms.

Research findings consistently indicate that excessive social media usage can exert negative psychological, emotional, social, and physical repercussions. Studies

conducted by **Dongre et al., (2017)**, **Daei et al., (2019) and Zoromba et al., (2023)** have underscored the necessity for intervention programs aimed at alleviating nomophobia.

The significance of this study stems from the researchers' observations regarding the prevailing challenges faced by a majority of university students. These observations illuminate profound disturbances and issues arising from the inability to detach from mobile phones, resulting in heightened anxiety and fear during periods of separation. These concerns are accompanied by various health problems including ocular strain, back and neck discomfort, sleep disturbances, and a range of psychological and social adversities. Undoubtedly, the issue of NMP among nursing students is of paramount importance, warranting thorough exploration. Therefore, this study has been devised to evaluate the efficacy of a psycho-educational program in addressing levels of nomophobia and social media addiction among undergraduate nursing students at El-Mansoura University.

Operational definitions:

Nomophobia pertains to a psychological syndrome wherein individuals experience fear and anxiety when disconnected from mobile or cell phone contact. This syndrome is characterized by a spectrum of emotions, including anger, tension, depression, quarrels, social withdrawal, diminished concentration, and fatigue **(Yildirim & Correia, 2015)**. The severity of nomophobia among nursing students is gauged through varying degrees: mild, moderate, and severe nomophobia, assessed using the Nomophobia Questionnaire (NMP-Q) **(Yildirim & Correia, 2015)**.

Social Media Addiction denotes an unhealthy reliance on interactive platforms such as Facebook, Twitter, and Instagram. Analogous to other dependencies, social media addiction manifests through excessive usage and difficulty in abstaining from these platforms. This phenomenon is quantified using the Social Media Addiction Scale, formulated by **(Al-Menayes, 2015)**.

Aim of the study:

Study Aim: This research endeavors to evaluate the efficacy of a psycho-educational program in addressing the levels of nomophobia and social media addiction within the undergraduate nursing student at Mansoura University.

Study Objectives: The specific objectives of this investigation encompass appraising the comparison of the scores of both nomophobia

and social media addiction pre- post intervention among undergraduate nursing students at Mansoura University.

Research hypothesis: It is hypothesized that Mansoura University undergraduate nursing students participating in the psycho-education program will demonstrate a decrease in the mean scores of nomophobia and social media addiction levels subsequent to the implementation of the study program, in comparison to their scores prior to the program.

2. Subjects and Method

Study Design: This study adopts a quasi-experimental research approach with a pre-posttest design

Study Setting: The research is conducted within the confines of the Faculty of Nursing at Mansoura University, located in Egypt.

Sample Size: The sample size calculation was performed using Medcalc 15.8 (https://www.medcalc.org/). A pilot study involving 40 students (excluded from the final study) indicated that 95% of them possessed a high level of nomophobia. With an alpha error of 5%, a study power of 80%, and a precision of 5%, the computed sample size amounted to 239. After accounting for potential dropout rates, a total of 260 students successfully concluded the study. Inclusion criteria encompassed students aged between 17 and 23, of both genders, actively utilizing smartphones, and willingly participating in the study with the requisite time commitment.

Sample: The target population encompasses all undergraduate nursing students of Mansoura University, spanning across all academic years (2021-2022).

Sampling Technique: To compose the study sample, a stratified approach based on the students' academic years (ranging from first to fourth year) was employed. Two clusters (rounds) were subsequently selected using a systematic random sampling method derived from the comprehensive list of all rounds. All students within the selected clusters were included in the intervention, and all participants (260 students) completed both pre- and post-intervention questionnaires.

Tool of data collection

In the current study, three distinct instruments were employed for data collection.

Instrument 1 - Questionnaire Form: Devised by the researchers, this questionnaire encompassed demographic particulars of the students. These variables encompassed age, gender, social status, economic standing,

family income, duration of mobile usage, academic year within the college, and educational levels.

Instrument 2 - The Nomophobia Questionnaire (NMP-Q): The NMP-Q, designed and validated by **Yildirim and Correia (2015)**, constituted the second tool. Comprising 20 inquiries, the questionnaire gauged nomophobia levels on a 7-point Likert scale ranging from 1 to 7, wherein 1 represented "totally disagree" and 7 denoted "totally agree." The NMP-Q was categorized into four core domains: inability to access information (items 1–4); relinquishing convenience (items 5–9); incapacity to communicate (items 10–15); and loss of connectedness (items 16–20). The Arabic version of the NMP-Q, as presented by **Farchakh et al., (2021)**, was employed by the researchers. The cumulative score of NMP-Q is computed by summing the values attributed to each item, yielding a potential score range of 20 to 140 points. Elevated scores (100-140) correlate with heightened nomophobia levels, moderate scores (60-99) suggest a moderate level of nomophobia, and lower scores (21-59) indicate mild nomophobia levels. The internal consistency reliability for the NMP-Q, indicated by Cronbach's alpha, is deemed satisfactory at 0.95.

Instrument 3 - The Social Media Addiction Scale (SMAS): The SMAS, formulated by **Al-Menayes (2015)**, served as the third instrument. Tailored in Arabic to measure social media addiction among university students, this scale comprises 14 items adapted from the Internet Addiction Test (IAT) to align with the context of social media usage. The items were rated on a 5-point Likert scale, encompassing response options of "strongly agree," "agree," "neutral," "disagree," and "strongly disagree," corresponding to scores of 5, 4, 3, 2, and 1, respectively. Scores on the SMAS range from a minimum of 14 to a maximum of 70. Elevated scores suggest a self-perceived status of "social media addict." The Arabic version of the SMAS is a valid and reliable instrument (Concurrent validity showed correlation with social media addiction factors, while Cronbach's alpha = .75) for use in measuring social media addiction in the Arab world **(Al-Menayes, 2015)**.

Study procedures

• The study was executed in three distinct phases: a preparatory phase, an implementation phase, and an evaluation phase.

• The fundamental consent and necessary permissions for conducting the study were acquired during the preparatory phase, following the approval of the Research Ethics Committee at the Faculty of Nursing, Mansoura University, under code No. P.0242.

• A panel of seven experts in related fields such as psychiatric mental health nursing, community health nursing, and community medicine assessed and validated the tools for their accuracy, clarity, relevance, applicability, comprehensiveness, understandability, and feasibility. The tools exhibited a Lawshe Content Validity Ratio greater than 0.90, indicating robust content validity. Comprehensive evaluation encompassed aspects like clarity, relevance, comprehensiveness, ease of application, and overall understanding.

• The researchers initiated the data collection process, employing a structured questionnaire created through a comprehensive review of pertinent literature. The questionnaire was adapted for online use using Google Form.

• The initial segment of the questionnaire served as an information sheet, elucidating the study's objectives, data collection timeline, and procedure. Respondents were informed that submitting the questionnaire would imply their voluntary participation. Invitations to participate were extended through social media platforms (Facebook, Instagram, Twitter, and WhatsApp) or email.

• The compatibility of the tool link with various browsers was verified. Participants who consented to partake were asked to provide their phone numbers to be added to a WhatsApp group named "Management Nomophobia," established by the researchers.

• Prior to enlisting eligible participants, informed consent was sought. Study subjects were sent the consent form, instructed to print, sign, scan, or photograph it, and then submit it back via the WhatsApp group or email.

• The researchers meticulously devised a psychoeducation program, consisting of six sessions spaced one week apart. These sessions encompassed overviews of nomophobia and social media addiction, coupled with strategies for overcoming these issues.

• Implementation Phase: The Google Form links of the study tools were forwarded to study participants within the WhatsApp group. They were requested to complete these forms as a pretest, enabling the collection of baseline data before the psychoeducation program commenced. Responses were stored in a dedicated worksheet, accessible only via

Google account login. Subsequently, the psychoeducational program sessions were executed, each session's content summarized in Table 1.

The research team meticulously crafted informative PowerPoint presentations for each session of the study program. ZOOM meetings were arranged to elucidate these sessions to participating students and address any queries they had. Moreover, the researchers maintained constant availability on WhatsApp to promptly respond to any concerns or inquiries raised by the participants.

Students were grouped into four distinct cohorts, each corresponding to a different academic grade. These groups convened weekly from 9 p.m. to 10 p.m., utilizing the Zoom Cloud Meeting platform.

• Teaching Methods: The curriculum of the psychoeducational program was conveyed to all students. Uniform teaching methodologies, involving videos and interactive discussions, were consistently employed across each session. The psychoeducation was provided to the different groups of participants by the last author to maintain intervention fidelity.

• Teaching media encompassed a spectrum of tools such as the Zoom Cloud Meeting platform, pamphlets, handouts, videos, PowerPoint presentations, audio resources, and visual aids.

• Evaluation Phase: Following the implementation of the study's intervention, the posttest was administered. This involved distributing the Google Form link to participants to assess their levels of nomophobia and social media addiction immediately after the completion of the psychoeducational program. This assessment encompassed components from both Tool 1 and Tools 2 and 3.

• The entire study was conducted across three phases, commencing from October 2021 and concluding in February 2022.

Pilot Study: A pilot study was undertaken involving a subset of participants, specifically 40 students, to evaluate the adequacy of the Arabic versions of the assessment tools and to ascertain the time required for their completion. This pilot phase, spanning 15 minutes per participant, was designed to prevent participant fatigue and facilitate necessary adjustments based on the findings. It's noteworthy that participants involved in the pilot study were excluded from the main study to prevent any potential

contamination of the study sample.

Ethical considerations:

Upon receiving approval from the Research Ethics Committee at the Faculty of Nursing – Mansoura University, ethical considerations were diligently addressed. Participants were duly informed that their engagement in the study was entirely voluntary, and they retained the prerogative to withdraw from the study without any adverse consequences. Comprehensive measures were taken to ensure anonymity, protect the privacy of study subjects, and maintain the confidentiality of the collected data. Throughout the study, utmost respect was accorded to the subjects' privacy and confidentiality.

Statistical Analysis: The process of data entry and subsequent analysis was conducted utilizing SPSS (Statistical Package for Social Sciences) version 23 (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.). Qualitative variables were succinctly summarized using frequency counts and corresponding percentages. Quantitative variables were presented in terms of both mean and standard deviation (SD). For the purpose of significance testing across diverse categories of each variable, an unpaired t-test was employed. Additionally, the pre- and post-intervention scores were subjected to comparison through the utilization of a paired t-test. Notably, statistical significance was determined by a P-value equal to or less than 0.05.

3. Results:

In the pre-intervention phase 4.6% and 95.4% had moderate and high nomophobia, however after intervention all students had moderate nomophobia (data not shown in tables).

Table 2 shows that about 62% of students were <20 years old, 43.1% of them are females, and 42.3% of them were from rural areas. However, 91.2% were single and 56.2% had enough family income, 22.3% were smokers and 30.4% practice sports.

Table 3 shows that only 21.2% of studied students had >1 SIM, 45.8% of them uses mobile for >5 years, while 95.4% check their phone >10 times per day and 93.1% spent >50 LE to charge their phones. 59.2% of them uses mobile for >5 hours daily, while 55.8% made annual updating.

Table 4 reveals that at the pre intervention phase, the total mean score of nomophobia was 118.4±9.9 and decreased to 79.9±5.6 post intervention. While the total mean score of social media addiction was 65.1±6.2 at the pre intervention phase and decreased to 35.8±3.9 post intervention. A highly statistically significant difference was detected between the total mean score of nomophobia and social media addiction in the pre-test and post-test among studied students (P=0.001).

Table 5 illustrates that there are highly significant differences between nomophobia score and demographic & pattern of mobile use among studied students pre and post intervention program. This significance is persistent with stratified analysis of categories of different variables. The pre-intervention score is significantly higher in students who used phone for > 5 years, check their phone > 10 times daily and spent >50 LE to charge their phones. It is evident that nomophobia decreased among students who check their phone ≤10 times daily, whereas $p \leq 0.001$.

Table 6 illustrates that there are highly significant differences between social media addiction score and demographic & pattern of mobile use among studied students pre and post intervention program. This significance is persistent with stratified analysis of categories of different variables. The pre-intervention score is significantly higher in students who spent >50 LE to charge their phones. It is evident that social media addiction decreased among students who spent >50 LE to charge their phones, whereas $p \leq 0.001$.

Correlation between nomophobia and social media addiction pre/post scores

There is a positive nonsignificant correlation between score of nomophobia pre intervention and score of social media addiction pre intervention (r= 0.17) and there is a positive significant correlation between score of nomophobia post intervention and score of social media addiction post intervention (r= 0.001) (data not shown in tables).

4. Discussion

Rapid strides in technology and their integration into daily routines introduce a series of challenges. Notably, the phenomenon of mobile phone deprivation, characterized by discomfort, anxiety, and irritability experienced when communication via mobile phones is unattainable **(Karademir-Coskun & Kaya, 2020)**, underscores the importance of this study. The primary aim of this investigation was to

evaluate the efficacy of a psychoeducational program in addressing the levels of nomophobia and social media addiction among undergraduate nursing students at Mansoura University.

Within this context, the study's findings unveil that a significant proportion of students were under 20 years of age, with more than half being male. Furthermore, a majority hailed from urban locales, were single, and boasted sufficient monthly family income. Strikingly, almost one-quarter of the participants identified as smokers, while a substantial two-thirds actively engaged in sports. The prevalence of students utilizing multiple SIM cards and long-standing mobile phone usage of over five years is reflective of the familiarity of the younger generation with modern technologies. It is noteworthy that such extensive smartphone engagement often encompasses communication, chats, and online gaming **(Ahmed et al., 2019)**. These findings resonate with prior research, showcasing congruence with **Ahmed et al., (2019)** assertion that the average age of students in their study was 22.2 ± 3.2 years, with nearly 45% having used smartphones for over five years.

Additional revelations from the study highlight that a minority of students check their phones over ten times a day, and a comparable minority spends more than 50 LE on charging their phones. This is likely influenced by the varied roles smartphones play in students' lives, with the convenience of home Wi-Fi often serving as a preferred means of online access. These observations are endorsed by **Alammar et al., (2020)**, who noted that 2.6% of students in Saudi Arabia used social media daily for less than an hour, whereas 50.5% dedicated over six hours daily to this activity, regardless of the associated high costs. Similar sentiments were echoed by **Purnama, Darmawati, and Mulyatin (2021)** in Indonesia, who reported that around 57.6% of respondents felt discomfort upon restricting their social media usage, and a substantial 77.6% were identified as addicted to it.

Turning to the levels of nomophobia, it was discerned that all students exhibited moderate to high levels in the pre-psychoeducational program phase. However, following the program's implementation, a shift towards moderate nomophobia levels was observed among all students. This indicates a fundamental shift in awareness regarding the detrimental impact of nomophobia, with the program effectively highlighting its gravity. This outcome aligns with the work of **Copaja-**

Corzo, Aragón-Ayala, and Taype-Rondan (2022), who noted a similar trend of approximately one-third of their studied students experiencing moderate to severe nomophobia—a phenomenon often linked to a spectrum of psychiatric comorbidities.

Extending this discourse, the work of **Çakmak-Tolan and Karahan (2022)** indicated higher nomophobia scores among college students. Intriguingly, they reported notable discrepancies in nomophobia levels tied to certain student behaviors, such as carrying a charger, frequency of smartphone checks upon waking, checking phones throughout the day, daily smartphone use duration, and internet access via smartphones. Akin observations by **Haryati, Widianti, and Hidayati (2020)** revealed that a majority of respondents exhibited moderate nomophobia levels and consistently kept their phones within proximity.

In the context of the current study, a marked and statistically significant decline in overall pre- and post-program intervention nomophobia scores was observed. This pattern held true even when stratified analysis was applied to different variables. Particularly, students who had used their phones for over five years, checked their phones over ten times daily, or expended more than 50 LE on charging, exhibited higher pre-intervention scores that notably improved post-intervention. This underscores the program's effectiveness in sensitizing young adults about nomophobia and its potential risks. These findings mirror those of **Daei, Ashrafi-rizi, and Soleymani (2019)**, who identified a positive association between higher nomophobia scores and greater smartphone usage frequency.

Aligning with the current study's findings, **Muniraj (2014**) emphasized the transformative impact of psychoeducation in significantly mitigating levels of nomophobia.

Concurring with these results, the studies by **Guin et al. (2020)** and **Priyanka & Olive (2016)** underscored the efficacy of structured programs in enhancing understanding of nomophobia prevention and management. Notably, individual and group counseling, awareness campaigns, and psychotherapy were also highlighted as effective strategies to raise awareness and reduce the incidence of nomophobia among young adults **(Kar, Sarma, Mistry, and Pal, 2017)**. Furthermore, the efficacy of nomophobia therapy in alleviating associated symptoms, particularly in high school students extensively engaged with their phones, was evident **(Mohammadi, Manshaee,**

& Nadi, 2021).

Moreover, the study unveiled that pre-intervention social media addiction scores were significantly higher among students who checked their phones more than ten times daily and expended more than 50 LE per month on charging. The explanation could lie in the participants' enhanced awareness of the perils of social media addiction post-intervention, leading to visible improvements. Similar findings were reported by **Adem and Derya (2021)**, indicating that most students spent 1-3 hours daily on social media, with nearly 36% checking it whenever a notification arrived. Hence, participants were potentially at risk of social media use disorder.

In a related context, **Aini, Bukhori, and Abu Bakar (2021)** demonstrated the effectiveness of interventions centered on promoting life tranquility, mental clarity, patience exercises, and inner silence as a strategy for reducing stress and anxiety. Moreover, **Arpaci (2022)** unveiled gender, daily usage duration, and daily checks as significant contributors to varying levels of nomophobia among students.

The current study also unearthed a moderate and positive correlation between pre- and post-intervention scores of nomophobia and social media addiction. This attests to the program's efficacy in shaping post-intervention levels of both factors. This alignment echoes the perspective of **Notara, Vagka, Gnardellis, and Lagiou (2021)**, who identified a positive correlation between nomophobia and its physical health impacts among smartphone users. Similarly, **Çırak, and Tuzgöl Dost (2022)** showcased the predictive relationship between social media addiction and nomophobia severity.

Similarly, **Çobanoğlu, Bahadir, Yilmaz, and Kiziltan (2021)** discerned a positive and moderate association between students' nomophobia and digital addiction levels. The regression coefficient analysis highlighted the substantial positive influence of smartphone addiction on nomophobia, a sentiment echoed by **Khan, Atta, Malik, & Makhdoom (2021) and Zaqreen, Hong, & Daud (2023)**, which emphasized smartphone addiction as a significant predictor of nomophobia.

Study Limitations and Strengths

Current study limitations included the external validity and generalizability as the study was conducted within a specific cohort of

undergraduate nursing students at a single institution, which might limit the generalizability of the findings to other populations or settings. Secondly, the study assessed the immediate post-intervention effects. Long-term effects of the psycho-educational program on sustaining reduced nomophobia and social media addiction levels were not explored. Third, the reliance on self-reported data for nomophobia and social media addiction levels introduces the potential for social desirability bias, where participants might provide responses they believe are expected rather than accurate reflections of their behaviors. Finally, the absence of a control group limits the ability to ascertain whether the observed changes were solely attributable to the psycho-educational program or influenced by external factors.

Despite these limitations, the first strength of the present study that demonstrates a clear and statistically significant reduction in both nomophobia and social media addiction scores post-intervention, highlighting the effectiveness of the psycho-educational program. The second strength was the detailed analysis using a stratified analysis of various demographic and mobile usage variables adds depth to the findings, allowing for a more nuanced understanding of the factors contributing to nomophobia and social media addiction. Third, current study addresses a relevant and emerging issue among the student population, shedding light on the potential implications for nursing practice, patient care, and mental well-being. Moreover, the study captures a comprehensive view of students' technology-related challenges, providing a broader perspective on their digital behaviors. Finally, the study may add to the literature limited body of research on interventions for nomophobia and social media addiction, contributing valuable insights to the field.

5. Conclusion

The psychoeducation program is effective to alleviate nomophobia and social media addiction among undergraduate nursing students.

6. Study Implications

From a nursing education standpoint, these findings emphasize the value of psycho-educational programs in addressing emerging challenges such as nomophobia and social media addiction. Incorporating such programs into the nursing curriculum can equip future nurses with the knowledge and skills to recognize and manage these issues among their

patients.

In nursing practice, nurses can play a pivotal role in raising awareness about the potential negative impacts of excessive mobile phone use and social media addiction. By understanding the correlations between these issues and recognizing the patterns identified in our study, nurses can provide targeted support and interventions for patients who may be struggling with nomophobia or social media addiction.

Table 1 Description and illustration of sessions, objective, duration, and content of psych-educational program

Sessions	Objective	Duration	Content
1st session	Establish rapport between researchers and participants.	45 min.	- Explanation of confidentiality commitment. - Introduction of online group etiquette. - Clarification of program goals. - Conduct pre-test assessment.
2nd session	Impart fundamental knowledge about nomophobia, its symptoms, and negative implications.	60 min.	- Detailed overview of nomophobia, including its symptoms and detrimental outcomes.
3rd session	Impart fundamental knowledge about social media addiction, its symptoms, and negative consequences.	60 min.	- In-depth exploration of social media addiction, encompassing symptoms, psychological and social repercussions, and adverse consequences.
4th session	- Equip participants with essential strategies, practices, and skills to effectively manage nomophobia and social media addiction.	60 min.	-Thorough introduction to mindfulness, highlighting its significance and different exercises to manage symptoms of nomophobia and social media addiction.
5th session	- Facilitate the practice of relaxation exercises to alleviate both physical and psychological manifestations of nomophobia and social media addiction while coping with related psychological symptoms.	60 min.	-Instruction, training, and demonstration of relaxation techniques aimed at diminishing anxiety and addressing psychiatric symptoms..
6th session	Conclude the psychoeducational program and administer the post-test assessment.	45 min.	- Comprehensive recap of the entire psychoeducational program. - Provide an opportunity for students to articulate program benefits and integrate them into their lifestyles. - Conduct post-test assessment.

Table 2: Demographic characteristics of studied students (n=260)

Demographic characteristics	Frequency	Percent
Age:		
- <20 years	161	61.9
- 20 & more	99	38.1
	Mean ± SD 19.27 ±1.54	
Sex:		
- Female	112	43.1
- Male	148	56.9
Residence:		
- Rural	110	42.3
- Urban	150	57.7
Marital status:		
- Single	237	91.2
- Married	23	8.8
Monthly family income:		
- Enough	146	56.2
- Not enough	80	30.8
- Save	34	13.1
Smoking:		
- No	202	77.7
- Yes	58	22.3
Sports activity:		
- Yes	79	30.4
- No	181	69.6

Table 3: Pattern of mobile use among studied students (n=260)

Pattern of mobile use	Frequency	Percent
Number of SIM:		
- One	205	78.8
- >1	55	21.2
Duration of mobile use:		
- ≤5 years	141	54.2
- > 5	119	45.8
Phone check per day:		
- ≤10 times	12	4.6
- >10 times	248	95.4
Monthly charge cost:		
- ≤50LE	18	6.9
- >50 LE	242	93.1

Daily hours of use: - ≤5 - > 5	 106 154	 40.8 59.2
Annual updating: - 1-3 - 4 & more	 115 145	 44.2 55.8

Table 4: Total mean scores of nomophobia and social media addiction among studied students pre and post intervention program (n=260).

Items	**Pre-intervention Mean ± SD**	**Post-intervention Mean ± SD**	**t-test**	**p-value**
Nomophobia	118.4±9.9	79.9±5.6	64.8	≤0.001
Social media addiction	65.1±6.2	35.8±3.9	64.8	≤0.001

Table 5: variation of pre- post intervention mean score of nomophobia and demographic & pattern of mobile use among studied students (n=260).

Items	**Pre-intervention Mean ± SD**	**Post-intervention Mean ± SD**	**Paired t-test**
Overall	118.4±9.9	79.9±5.6	t=64.8,P≤0.001
Age: <20 years	117.7±10.5	79.8±5.6	t=48.1,P≤0.001
20 & more	119.4±8.8	79.9±5.6	t=44.6,P≤0.001
Unpaired t-test	t=1.3,P=0.2	t=0.2,P=0.9	
Sex: Female	118.6±10.8	80.3±5.4	t=40.5,P≤0.001
Male	118.2±9.2	79.5±5.8	t=40.3,P≤0.001
Unpaired t-test	t=0.3,P=0.7	t=1.2,P=0.2	
Residence: Rural	119.3±10.3	80.4±5.5	t=39.9,P≤0.001
Urban	117.7±9.6	79.5±5.5	t=51.4,P≤0.001
Unpaired t-test	t=1.6,P=0.2	t=1.3,P=0.2	
Marital status: Single	118.3±10.0	79.9±5.7	t=51.0,P≤0.001
Married	119.0±8.9	79.8±4.8	t=22.0,P≤0.001
Unpaired t-test	t=0.3,P=0.8	t=0.3,P=0.97	
Family income: Enough	119.5±9.7	80.1±5.5	t=50.4,P≤0.001
Not enough	116.8±10.3	79.3±5.8	t=34.1,P≤0.001
Save	117.2±9.6	80.3±5.8	t=23.1,P≤0.001
F-test	F=2.1,P=0.1	F=0.6,P=0.6	
Smoking: No	118.1±10.0	79.9±5.6	t=55.4,P≤0.001
Yes	119.3±9.6	79.7±5.6	t=34.4,P≤0.001
Unpaired t-test	t=0.8,P=0.4	t=0.2,P=0.8	
Sports activity: Yes	118.5±11.0	78.5±6.1	t=34.4,P≤0.001
No	118.3±9.4	80.5±5.3	t=55.5,P≤0.001
Unpaired t-test	t=0.1,P=0.9	t=2.9,P=0.009	

Number of SIM: One	118.5±10.0	80.0±5.7	t=56.4,P≤0.001
>1	117.8±9.8	79.5±5.5	t=32.1,P≤0.001
Unpaired t-test	t=0.5,P=0.6	t=0.6,P=0.5	
Duration of mobile use: ≤5 years	117.2±10.7	79.9±5.9	t=43.3,P≤0.001
> 5	119.7±8.7	79.9±5.6	t=50.7,P≤0.001
Unpaired t-test	t=2.0,P=0.04	t=0.03,P=0.97	
Phone check per day: ≤10 times	110.4±11.5	77.5±8.4	t=9.4,P≤0.001
>10 times	118.7±9.7	80.0±5.5	t=65.1,P≤0.001
Unpaired t-test	t=2.9,P=0.004	t=1.5,P=0.1	
Monthly cost: ≤50LE	113.6±11.1	79.4±8.6	t=14.1,P≤0.001
>50 LE	118.7±9.7	79.9±5.4	t=63.8,P≤0.001
Unpaired t-test	t=2.1,P=0.03	t=0.4,P=0.7	
Daily hours of use: ≤5	118.7±8.5	79.7±6.0	t=44.2,P≤0.001
> 5	118.2±10.8	79.8±6.4	t=47.7,P≤0.001
Unpaired t-test	t=0.4,P=0.7	t=0.1,P=0.9	
Annul updating: 1-3	118.6±10.5	79.8±6.3	t=40.7,P≤0.001
4 & more	118.1±9.5	79.9±6.2	t=50.9,P≤0.001
Unpaired t-test	t=0.4,P=0.7	t=0.1,P=0.9	

Table 6: variation of pre- post intervention mean score of social media addiction and demographic &pattern of mobile use among studied students (n=260).

Items	**Pre-intervention Mean ± SD**	**Post-intervention Mean ± SD**	**Paired t-test**
Overall	65.1±6.2	35.8±3.9	t=64.8,P≤0.001
Age: <20 years	64.6±6.4	35.7±3.9	t=49.5,P≤0.001
20 & more	65.9±5.9	35.9±4.0	t=41.2,P≤0.001
Unpaired t-test	t=1.6,P=0.1	t=0.5,P=0.6	
Sex: Female	65.2±6.3	35.6±4.3	t=50.7,P≤0.001
Male	65.0±6.2	36.0±3.6	t=50.5,P≤0.001
Unpaired t-test	t=0.2,P=0.8	t=0.8,P=0.4	
Residence: Rural	64.4±6.5	36.3±3.7	t=40.3,P≤0.001
Urban	65.6±5.9	35.4±4.1	t=50.9,P≤0.001
Unpaired t-test	t=1.6,P=0.1	t=1.7,P=0.1	
Marital status: Single	65.0±6.2	35.8±4.0	t=61.0,P≤0.001
Married	65.9±6.3	36.1±3.8	t=20.4,P≤0.001
Unpaired t-test	t=0.6,P=0.5	t=0.4,P=0.7	
Family income: Enough	65.2±6.2	35.7±4.0	t=49.3,P≤0.001
Not enough	64.9±6.2	35.8±3.9	t=34.3,P≤0.001
Save	65.4±6.4	36.2±3.7	t=22.7,P≤0.001
F-test	F=0.1,P=0.9	F=0.3,P=0.8	
Smoking: No	65.1±6.3	35.9±4.0	t=55.2,P≤0.001
Yes	65.2±5.9	35.4±3.8	t=33.5,P≤0.001
Unpaired t-test	t=0.1,P=0.9	t=0.9,P=0.4	
Sports activity: Yes	65.2±6.2	35.4±4.4	t=34.7,P≤0.001
No	65.1±6.2	35.9±3.7	t=54.2,P≤0.001
Unpaired t-test	t=0.1,P=0.9	t=1.0,P=0.3	

Number of SIM: One	65.2±6.2	35.7±4.0	t=58.9,P≤0.001
>1	64.8±6.3	36.1±3.7	t=26.6,P≤0.001
Unpaired t-test	t=0.4,P=0.7	t=0.6,P=0.5	
Duration of mobile use: ≤5 years	64.6±6.4	35.9±3.8	t=46.3,P≤0.001
> 5	65.8±6.0	35.6±4.1	t=45.0,P≤0.001
Unpaired t-test	t=1.6,P=0.1	t=0.7,P=0.5	
Phone check per day: ≤10 times	57.0±4.1	35.3±3.0	t=14.5,P≤0.001
>10 times	65.5±6.0	35.8±4.0	t=64.5,P≤0.001
Unpaired t-test	t=4.8, P≤0.001	t=0.5,P=0.6	
Monthly cost: ≤50LE	55.9±5.3	36.2±3.4	t=24.1,P≤0.001
>50 LE	65.8±5.9	35.8±4.0	t=66.3,P≤0.001
Unpaired t-test	t=7.1, P≤0.001	t=0.4,P=0.7	
Daily hours of use: ≤5	65.7±6.0	36.2±3.7	t=43.7,P≤0.001
> 5	64.7±6.4	35.5±4.1	t=47.5,P≤0.001
Unpaired t-test	t=1.2,P=0.2	t=1.3,P=0.2	
Annul updating: 1-3	65.1±6.3	35.6±4.2	t=40.2,P≤0.001
4 & more	65.1±6.2	35.9±3.8	t=50.7,P≤0.001
Unpaired t-test	t=0.01,P=0.99	t=0.6,P=0.5	

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