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Original Research Article

IMPACT OF NOMOPHOBIC BEHAVIOR ON NURSES' CARE BEHAVIORS WORKING IN INTENSIVE CARE UNIT IN TERTIARY CARE HOSPITALS, LAHORE, PAKISTAN

ZUNIRA A*, ARSHAD H, ASLAM A, FAROOQ A

Department of Nursing, Saida Waheed FMH College of Nursing, Lahore, Pakistan
**Corresponding author email address:* atikazunaira@gmail.com

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ABSTRACT

Background: *Nomophobia, defined as the fear or anxiety stemming from being without a mobile phone, has emerged as a behavioral phenomenon in the digital age. In critical care environments such as intensive care units (ICUs), excessive smartphone use among nurses may adversely impact focus, empathy, and the overall quality of patient care.* ***Objective:*** *To determine the prevalence of nomophobic behavior and its impact on the caring behaviors of ICU nurses in tertiary care hospitals in Lahore, Pakistan.* ***Study Design:*** *Descriptive cross-sectional study.* ***Settings:*** *Punjab Institute of Cardiology and Sir Ganga Ram Hospital, Lahore, Pakistan.* ***Duration of Study:*** *From 14 July 2022 to 31 July 2024.* ***Methods:*** *A total of 222 ICU nurses were selected via simple random sampling. Data collection tools included a validated self-administered questionnaire comprising demographic data, the Nomophobia Questionnaire (NMP-Q), and the Caring Behavior Inventory (CBI). Data were analyzed using SPSS version 25. Descriptive statistics were used to summarize the data, and Pearson's correlation coefficient was applied to evaluate the relationship between nomophobia and caring behavior.* ***Results:*** *Among the participants, 93.7% demonstrated high levels of nomophobia, while 45.5% exhibited poor caring behaviors. A significant inverse correlation was observed between nomophobia and caring behavior ($r^2 = 0.49$, $p < 0.001$), suggesting that increased nomophobic tendencies were associated with decreased caring behavior among ICU nurses.* ***Conclusion:*** *Nomophobia is highly prevalent among ICU nurses and is inversely associated with their professional caring behaviors. Institutional strategies—including digital professionalism training, policy reform, and awareness initiatives—are essential to curb the negative impact of smartphone dependency on critical patient care.*

Keywords: Nomophobia, Intensive Care Unit, Nursing, Caring Behavior, Smartphone Use, Pakistan

INTRODUCTION

The increasing integration of smartphones into daily life has given rise to a novel behavioral condition known as *nomophobia*, or "no mobile phone phobia"—the fear or anxiety of being without access to a mobile device. While digital technology offers considerable benefits, including rapid communication and access to information, its overuse has been associated with adverse psychological, cognitive, and behavioral outcomes. In healthcare settings, particularly in intensive care units (ICUs), such disruptions can compromise the delivery of timely, safe, and empathetic patient care.

Nomophobia is increasingly recognized as a significant mental health concern, associated with anxiety, stress, insomnia, impaired memory, and reduced attention span. A systematic review by Rodríguez-García et al. (2020) emphasized the widespread nature of nomophobia across professional settings, including healthcare, and its negative influence on interpersonal and work-related performance (1). Elhai et al. (2017) further reported strong correlations between problematic smartphone use and symptoms of anxiety and depression, highlighting the risk of burnout and impaired cognitive control in clinical environments (2). Similarly, Billieux et al. argued that smartphone dependence often arises from dysfunctional emotion regulation, which can impair decision-making and reduce focus at work (3).

In the context of clinical practice, smartphones have become both tools and potential distractions. While they aid in accessing medical information and enhancing interprofessional communication, their misuse can disrupt attention, delay responses, and reduce nurse–patient interaction quality. Studies conducted in Turkey and Indonesia have shown that ICU nurses with moderate to high nomophobia exhibit significantly lower caring behaviors and weaker interpersonal relationships with patients (4,5). Research by Ağrali et al. (2023) found that excessive phone use adversely affected nurses' caring performance, even in high-acuity settings like critical care units (6). Furthermore, data from multiple settings confirm that nurses often underestimate their own digital dependency, despite frequent checking of notifications and social media during clinical shifts (7,8). In Pakistan, where smartphone penetration is rapidly rising, nurses are increasingly exposed to digital distractions. However, little empirical research has been conducted to assess the prevalence and impact of nomophobia on nurses working in tertiary care hospitals. With a high patient-to-nurse ratio and limited institutional policies on mobile phone use, Pakistani ICUs represent an at-risk environment for compromised care behavior due to digital overreliance. As found by Gani (2019), mobile phone overuse among healthcare professionals in Pakistan was significantly associated with distraction, reduced job satisfaction, and burnout symptoms (9). Rehman and Muneer (2020) also highlighted that nomophobia is an emerging psychological concern in younger Pakistani adults, including students and healthcare providers (10).

Despite growing awareness, the link between nomophobic behavior and clinical performance remains underexplored in Pakistan, especially in critical care settings where consistent vigilance, empathy, and timely interventions are vital. Evaluating how nomophobia influences nurses' caring behaviors is essential for informing hospital guidelines, training programs, and professional development frameworks. This study aims to assess the level of nomophobic behavior among ICU nurses in tertiary care hospitals in Lahore and to explore its relationship with their observed caring behaviors. The findings can contribute to evidence-based strategies to improve clinical performance and promote digital discipline in hospital environments.

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METHODOLOGY

This descriptive cross-sectional study was conducted to evaluate the impact of nomophobic behavior on the caring behaviors of nurses working in intensive care units (ICUs) at two tertiary care hospitals in Lahore, Pakistan: Punjab Institute of Cardiology and Sir Ganga Ram Hospital. The study duration was from 14 July 2022 to 31 July 2024, initiated after obtaining ethical approval from the Institutional Review Board of Saida Waheed FMH College of Nursing. The target population included registered nurses currently working in ICU settings. Nurses were eligible to participate if they had at least one year of ICU experience, were between 20 to 45 years of age, and voluntarily consented to participate. Those with known neurological disorders or aged above 45 years were excluded from the study.

The estimated total number of ICU nurses across the selected hospitals was 500. Using Yamane's formula for sample size calculation with a 5% margin of error, a final sample size of 222 participants was determined. A simple random sampling technique was applied to recruit participants to ensure unbiased representation. Data were collected using a structured, self-administered questionnaire consisting of three sections. The first section gathered demographic details such as age, gender, marital status, and education. The second section comprised the Nomophobia Questionnaire (NMP-Q), which included eight items scored on a five-point Likert scale ranging from "strongly disagree" to "strongly agree." Total scores ranged from 8 to 40, with scores above 23 indicating a high level of nomophobia. The third section employed the Caring Behavior Inventory (CBI), which contained eleven items also rated on a five-point Likert scale. Scores ranged from 11 to 55, with scores above 22 indicating good caring behavior.

To ensure the reliability of the instruments, a pilot test was conducted among 30 ICU nurses who were not included in the final sample. The internal consistency of both the NMP-Q and CBI tools was evaluated using Cronbach's alpha, which yielded values above 0.70, indicating acceptable reliability. Ethical considerations were carefully observed throughout the study. Informed consent was obtained from each participant, and all data were kept confidential with no personal identifiers used. Participation was entirely voluntary, and participants had the right to withdraw at any time without penalty.

All collected data were entered and analyzed using IBM SPSS version 25. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to describe the sample characteristics and response distributions. Inferential analysis was conducted using Pearson's correlation coefficient to determine the relationship between nomophobic behavior and caring behavior. A p-value of less than 0.05 was considered statistically significant.

RESULTS

A total of 222 ICU nurses from Punjab Institute of Cardiology and Sir Ganga Ram Hospital, Lahore, participated in this descriptive cross-sectional study. Among the 222 participants, the majority were female (95.9%) and predominantly within the age range of 26–30 years (57.5%). A large proportion were single (71.5%) and held a bachelor's degree (97.3%).

Table 1: Demographic Characteristics of Participants (n = 222)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	9	4.1%
	Female	213	95.9%
Age Group	21–25	69	31.0%
	26–30	128	57.5%
	31–35	16	7.1%
	36–41	7	3.9%
Marital Status	Married	61	27.5%
	Single	160	71.5%
Education Level	Bachelor	217	97.3%
	Masters	2	0.9%
	General Nursing	3	1.3%

Nomophobia was measured using the Nomophobia Questionnaire (NMP-Q). A score above 23 indicated high nomophobia. In this cohort, 93.7% of nurses reported high levels of nomophobia, with a mean score of 31.9 ± 4.12. (Table 2)

Table 2: Nomophobia Scores Among Participants

Nomophobia Category	Frequency (n)	Percentage (%)	Mean ($\bar{X}$)	SD
Low (≤23)	14	6.3%	–	–
High (>23)	208	93.7%	31.9	4.12

Caring behavior was evaluated using the Caring Behavior Inventory (CBI). A score >22 was considered as good caring behavior. In this study, 54.5% of participants demonstrated good caring behavior with a mean score of 27.5 ± 11.5. (Table 3)

Table 3: Workplace Caring Behavior Scores

Caring Behavior Category	Frequency (n)	Percentage (%)	Mean ($\bar{X}$)	SD
Poor (≤22)	101	45.5%	–	–
Good (>22)	121	54.5%	27.5	11.5

Pearson correlation analysis was conducted to assess the relationship between nomophobia and caring behavior scores. A significant inverse correlation was found ($r^2 = 0.49$, $p < 0.001$), indicating that higher nomophobic tendencies are associated with lower levels of caring behavior. (Table 4)

Table 4. Correlation Between Nomophobia and Caring Behavior

Variable	Mean ($\bar{X}$)	SD	r^2	p-value
Caring Behavior Score	27.48	11.51	0.49	<0.001
Nomophobia Score	31.98	4.13	–	–

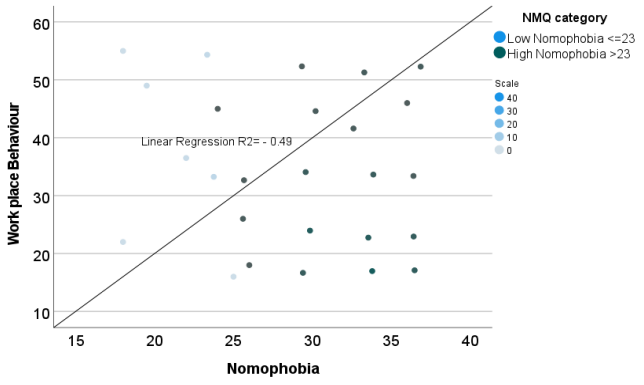

Figure 1: Regression analysis with p less than 0.05

Participants were asked about their emotional and behavioral responses regarding smartphone use during clinical practice. The highest agreement was reported for statements related to discomfort without phone access and anxiety when unable to communicate. (Table 5)

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Table 5: Item-wise Responses to Nomophobia Questionnaire (NMP-Q)

Item Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I feel uncomfortable without constant access to information	61	91	70	0	0
I would be annoyed if I could not look up information	50	111	46	13	2
Running out of battery would scare me	59	123	24	15	1
I would constantly check for signal/Wi-Fi	63	104	32	21	2
Desire to check the phone if not used for a while	55	118	30	16	3
Feel anxious if unable to communicate with family/friends	65	103	36	16	2
Feel nervous if unable to receive messages/calls	51	103	41	22	5
Feel awkward not checking notifications	75	85	35	23	4

The item-wise analysis of caring behavior revealed high agreement for actions related to listening, providing timely medications, and showing emotional support. However, variability was seen in self-assessment of technical skills. (Table 6)

Table 6: Item-wise Responses to Caring Behavior Inventory (CBI)

Item Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I attentively listen to the patient	79	102	24	17	0
I provide information to the patient for decision-making	68	113	22	19	0
I exhibit empathetic behavior	64	107	37	13	1
I ensure physical/emotional comfort	57	91	42	31	1
I know how to give shots/IVs	53	88	29	51	1
I demonstrate professional knowledge and skills	60	89	19	53	1
I allow patients to express feelings	58	91	21	51	1
I provide a reassuring presence	71	125	17	9	0
I respond quickly to patient's call	67	134	14	6	1
I give medications on time	69	131	14	7	1
I pay special attention to the patient	73	131	14	4	1

DISCUSSION

The present study assessed the impact of nomophobic behavior on caring behavior among ICU nurses in tertiary care hospitals in Lahore, Pakistan. The findings revealed a high prevalence of nomophobia among the participants, with 93.7% scoring above the threshold level. Additionally, nearly half (45.5%) of the nurses demonstrated poor caring behavior. The correlation analysis showed a statistically significant inverse relationship ($r^2 = 0.49$, $p < 0.001$) between nomophobia and caring behavior, suggesting that increased dependence on smartphones is associated with a decline in professional caring conduct.

These results are consistent with studies conducted in similar clinical settings. Ağrali et al. (2023) reported a comparable negative association between nomophobia and caring behaviors in ICU nurses in Turkey, concluding that digital overuse disrupts attention, empathy, and patient interaction in critical care environments (11). Anggoro and Handiyani (2022) also found that nurses with higher nomophobic tendencies exhibited lower self-efficacy and clinical performance, highlighting the psychological toll of constant digital connectivity in healthcare providers (12). This behavioral pattern undermines the core principles of nursing, which emphasize holistic, empathetic, and patient-centered care. The findings from this study further align with the observations of Elhai et al. (2017), who demonstrated that problematic smartphone use correlates with increased anxiety and depressive symptoms, both of which can compromise the cognitive and emotional capacities required for high-quality nursing care (13). A study by Yildirim et al. (2016) also supported this link, showing that nurses with high nomophobia levels are more likely to experience stress and mental fatigue, further deteriorating their caregiving abilities (14). A noteworthy element in our results is that even among nurses who displayed good caring behavior, there was a significant proportion who acknowledged being emotionally or behaviorally disturbed when separated from their mobile phones. This supports the findings of Billieux et al. (2015), who emphasized that nomophobia is not merely a technological dependency but a psychological disorder associated with emotional dysregulation and avoidance behavior (15). Nurses may turn to their devices during duty hours for temporary stress relief, which paradoxically reduces their attentiveness and presence at the patient's bedside.

Within the Pakistani context, the high rate of nomophobia observed in this study reflects trends reported by Rehman and Muneer (2020), who identified Pakistani youth—including healthcare workers—as particularly vulnerable to mobile phone overuse and its psychological effects (16). Furthermore, Gani (2019) noted that healthcare providers in rural and urban Pakistan often rely on smartphones not just for clinical communication but also for entertainment, which increases the risk of misuse during patient care (17).

Another factor influencing the observed behaviors may be the lack of strict hospital policies regulating mobile phone use among nursing staff. Marletta et al. (2021) highlighted the absence of institutional controls as a contributing factor to increased nomophobia and suggested that structured training and awareness programs can mitigate its impact on clinical performance (18). The results of this study support that recommendation, as participants with better digital boundaries appeared to exhibit stronger caring behaviors.

The strong statistical association between nomophobia and poor caring behavior demonstrated in our study underlines the urgent need for institutional strategies. These may include limiting smartphone usage during clinical hours, implementing digital professionalism training, and promoting mindfulness and communication skills among ICU nurses. It is also imperative to integrate mobile health (mHealth) training in nursing curricula to ensure that smartphone use is purposeful and aligned with patient care objectives rather than a source of distraction.

In summary, this study adds to the growing body of evidence that nomophobia significantly compromises the quality of nursing care, particularly in high-stakes environments like ICUs. By documenting this relationship in the Pakistani healthcare setting, this research provides a culturally contextualized understanding of how digital dependency can erode core clinical values. Addressing nomophobia through educational, administrative, and behavioral interventions is essential to uphold nursing standards and ensure patient safety in an increasingly digital world.

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CONCLUSION

Nomophobia is a rising concern among ICU nurses in Pakistan, significantly impairing their ability to deliver compassionate, patient-centered care. Addressing this behavioral challenge through awareness, education, and structured hospital policies is vital to ensuring the safety and quality of intensive care services.

DECLARATIONS

Data Availability Statement
All data generated or analysed during the study are included in the manuscript.
Ethics approval and consent to participate
Approved by the department Concerned. (IRBEC-SRH-23)
Consent for publication
Approved
Funding
Not applicable

CONFLICT OF INTEREST

The authors declared an absence of conflict of interest.

AUTHOR CONTRIBUTION

ATIKA ZUNIRA (Post RN BScN Student)
Conception of Study, Development of Research Methodology Design, Study Design, Review of manuscript, final approval of manuscript. Manuscript drafting.
HINA ARSHAD (Research Supervisor)
Manuscript revisions, critical input.
Data entry, data analysis, drafting article
ATIA ASLAM (Post RN BScN Student)
Study Design, Review of Literature.
AMINA FAROOQ (Post RN BScN Student)
Conception of Study, Final approval of manuscript.

REFERENCES

1. Rodríguez-García AM, Moreno-Guerrero AJ, Belmonte JL. Nomophobia: An individual's growing fear of being without a smartphone—A systematic literature review. *Int J Environ Res Public Health*. 2020;17(2):580. https://doi.org/10.3390/ijerph17020580
2. Elhai JD, Dvorak RD, Levine JC, Hall BJ. Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *J Affect Disord*. 2017;207:251–9. https://doi.org/10.1016/j.jad.2016.08.030
3. Billieux J, Maurage P, Lopez-Fernandez O, Kuss DJ, Griffiths MD. Can disordered mobile phone use be considered a behavioral addiction? An update on current evidence and a comprehensive model for future research. *Curr Addict Rep*. 2015;2(2):156–62. https://doi.org/10.1007/s40429-015-0054-y
4. Marletta G, Trani S, Rotolo G, et al. Nomophobia in healthcare: an observational study between nurses and students. *Acta Biomed*. 2021;92(S2):e2021035. https://doi.org/10.23750/abm.v92iS2.11398
5. Anggoro W, Handiyani H. Self-efficacy and nomophobia in nurses in Indonesia. *KnE Life Sci*. 2022;7(2):943–53. https://doi.org/10.18502/kls.v7i2.10394
6. Ağrali C, Ünal E, Çetin Y, Kapikiran G. The effect of nomophobic behaviors on caring behaviors in nurses working in intensive care clinics. *Med Records*. 2023;5(3):613–9. https://doi.org/10.37990/medr.1310500
7. Molu NG, İçel S, Aydoğan A. Relationship between nomophobia levels and personality traits of nursing students: A multicenter study. *Mod Care J*. 2023;20(3):e132269. https://doi.org/10.5812/modernc-132269
8. Modic MB, Siedlecki SL, Griffin MTQ, Fitzpatrick JJ. Caring behaviors: perceptions of acute care nurses and hospitalized patients with diabetes. *J Patient Exp*. 2014;1(1):26–30. https://doi.org/10.1177/237437431400100107
9. Gani A. The use of mobile phones and its impact on healthcare delivery in rural areas: A case study of Pakistan. *Int J Res Soc Sci*. 2019;9(7):202–18. [DOI not available]
10. Rehman AU, Muneer S. Psychological impacts of nomophobia: A systematic review and meta-analysis. *Int J Res Innovation Soc Sci*. 2020;4(10):283–95. [DOI not available]
11. Çetin Y, Ağralı C, Ünal E, Kapıkıran G. The effect of nomophobic behaviors on caring behaviors in nurses working in intensive care clinics. *Med Records*. 2023;5(3):613–619. https://doi.org/10.37990/medr.1310500
12. Anggoro W, Handiyani H. Self-efficacy and nomophobia in nurses in Indonesia. *KnE Life Sci*. 2022;7(2):943–953. https://doi.org/10.18502/kls.v7i2.10394
13. Elhai JD, Dvorak RD, Levine JC, Hall BJ. Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *J Affect Disord*. 2017;207:251–259. https://doi.org/10.1016/j.jad.2016.08.030
14. Yıldırım C, Sumuer E, Adnan M, Yıldırım S. A growing fear: Prevalence of nomophobia among Turkish college students. *Inf Dev*. 2016;32(5):1322–1331. https://doi.org/10.1177/0266666915599025
15. Billieux J, Maurage P, Lopez-Fernandez O, Kuss DJ, Griffiths MD. Can disordered mobile phone use be considered a behavioral addiction? An update on current evidence and a comprehensive model for future research. *Curr Addict Rep*. 2015;2(2):156–162. https://doi.org/10.1007/s40429-015-0054-y
16. Rehman AU, Muneer S. Psychological impacts of nomophobia: A systematic review and meta-analysis. *Int J Res Innovation Soc Sci*. 2020;4(10):283–295.
17. Gani A. The use of mobile phones and its impact on healthcare delivery in rural areas: A case study of Pakistan. *Int J Res Soc Sci*. 2019;9(7):202–218.
18. Marletta G, Trani S, Rotolo G, Di Monte MC, Sarli L, Artioli G, et al. Nomophobia in healthcare: an observational study between nurses and students. *Acta Biomed*. 2021;92(S2):e2021031

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