ASSESSMENT OF SMARTPHONE USAGE AMONG NURSING STUDENTS AT AAB COLLEGE

Edona Haxhija[1], Zamira Shabani[2]

[1]Department of Nursing, Faculty of Nursing, "AAB College," 10000, Prishtina, KOSOVA.

[2]Department of Clinical Subjects, Faculty of Natural Sciences, University of Shkodra "Luigj Gurakuqi," 4001, Shkodër, ALBANIA.

edona.haxhija@universitetiaab.com, zamira.shabani@unishk.edu.al

INTRODUCTION

- Smartphones are essential tools for students used for academics, socializing, and entertainment.

- However, excessive use can lead to **smartphone addiction**, affecting:
  - **Mental health**: stress, anxiety, depression, isolation, and burnout
  - **Cognitive function**: reduced attention span and poor sleep
  - **Academic performance**: lower engagement, procrastination, and declining focus

- **Social media platforms** (e.g., Instagram, TikTok) intensify addiction due to their highly engaging design.

METHODOLOGY

- **Aim:** To assess smartphone addiction among the nursing students at the AAB College.
- **Study population:** Nursing Bachelor students at the AAB College, Prishtinë, Kosovë
- **Study design:** Cross-Sectional Study, January- February 2025.
- **Sample size:** 420 students, predominantly female (85.7%, n=360).
- **Data collection:**
  - *Online* self-administered questionnaire; shared anonymously via WhatsApp; 5-10 min to complete
  - *Focus:* smartphone use, dependence, and related psychological and behavioral factors
  - Informed *consent* obtained
- **Data analyses:**
  - *Method:* Hierarchical regression using Ordinary Least Squares (OLS) estimation
  - *Tools:* Microsoft Office Excel 2010 and SPSS 19

HYPOTHESIS

- **H1**: Higher smartphone dependence is positively associated with daily smartphone use.
  - **H1a**: Emotional/habitual dependence relates to higher smartphone use.
  - **H1b**: Strain/external awareness dependence relates to higher smartphone use.

- **H2**: Smartphone-related behaviors and emotional reactions predict higher smartphone use.
  - **H2a**: Nighttime checking predicts higher smartphone use.
  - **H2b**: Anxiety when forgetting phone predicts higher smartphone use.

- **H3**: Behavioral and emotional responses moderate the dependence-use relationship.
  - **H3a**: Emotional dependence has a stronger impact on use for those with phone anxiety.
  - **H3b**: Strain dependence has a stronger impact on use for those who check phones at night.

- **H4**: Sociodemographic factors (age, gender, academic year) have weak or inconsistent associations with smartphone use.

- **Dependent Variable**:
  - ***Estimated Daily Smartphone Use***: Self-reported average hours spent on smartphones daily (excluding voice calls), categorized into ranges (e.g., “1–3 hours”), then recoded into a continuous scale (0.5 to 10 hours).

- **Independent Variables**:
  - ***Smartphone Dependence Scale***: 10 items assessing emotional, behavioral, and physical dependence (e.g., anxiety without phone, prolonged use). Factor analysis identified two components:
    - **Emotional/Habitual Dependence** ($\alpha = .844$): Compulsive checking, emotional reliance.
    - **Strain/External Awareness**: Awareness of overuse consequences (e.g., concentration).
  - ***Phone Anxiety***: Binary variable for anxiety when separated from smartphone.
  - ***Nighttime Checking***: Binary variable for phone use during nighttime awakenings.

- **Control Variables**: **Demographics**: Age, Gender, Urban Residence, and Year of Study.

RESULTS

Descriptive Statistics

- ***Mean age:*** 21.1 years (SD = 3.17), range 18- 45 years.
- ***Mean squared age:*** 479.64 (SD = 218.77).
- ***Female:*** 85.7% (n=360), reflected by the high mean value for the gender dummy variable (M =0.90, SD = 0.29).
- ***Urban residence*** (M = 0.54, SD = 0.49), indicating a balanced distribution between urban and rural origins.
- ***Academic year:*** Fairly distributed across the three bachelor cohorts: Year 1 (M = 0.15), Year 2 (M = 0.54), and Year 3 (M = 0.63).

Variable	N	Min	Max	M	SD
Age	420	0	45	20.9048	3.7
Age Squared (Age²)	420	100.00	2025.00	479.6405	218.77912
Female (1 = Female, 0 = Male)	420	0.00	1.00	.9024	.29715
Urban Residence (1 = Urban, 0 = Rural)	420	0.00	1.00	.5452	.49854
Study Cycle: Nursing	420	0.00	1.00	.9405	.23688
Bachelor Year 1	420	0.00	1.00	.1548	.36211
Bachelor Year 2	420	0.00	1.00	.0548	.22779
Bachelor Year 3	420	0.00	1.00	.6333	.48247
Has Smartphone	420	0.00	1.00	.9857	.11881
Daily Use: <1 hour	420	0.00	1.00	.0500	.21820
Daily Use: 1–3 hours	420	0.00	1.00	.3357	.47280
Daily Use: 4–6 hours	420	0.00	1.00	.4238	.49475
Daily Use: 7–9 hours	420	0	1	0.12	0.32
Daily Use: >9 hours	420	0	1	0.06	0.23
Estimated Smartphone Use (hours/day)	420	.50	10.00	4.4917	2.59324
Checks Phone at Night (1 = Yes)	420	0.00	1.00	.5167	.50032
Anxious Without Phone (1 = Yes)	420	0.00	1.00	.8167	.38740
Dependence level based on average smartphone dependence score	420	10.00	60.00	34.0643	9.29820
Feels impatient when not holding phone	420	1.00	6.00	3.3786	1.44494
Dependence – Emotional/Habitual (Factor 1)	420	1.00	6.00	3.4829	1.07884
Dependence–Strain/External Awareness (Factor 2)	420	1.00	6.00	3.3300	.93816

RESULTS

- 98.6% of respondents **owned** a smartphone (M = 0.99, SD = 0.09).
- **Daily smartphone use**: M = 4.5 hours/day (SD = 2.6), range 30 min- 10 hours.
- 49.5% **check** their phone when they wake up **at night**.
- 81.9% experience **anxiety** when separated from their smartphone
- **Total smartphone dependence score**: M = 34.06 (SD = 9.29), range 10- 59 (out of a possible 60)
- **The average item score**: 3.4 (SD = 0.92), reflecting moderate levels of perceived dependence (moderate=57.9%, low =30.7% and high=11.4%).
- **Factor analysis- the mean score**:
  - Emotional/Habitual Dependence: 3.48 (SD = 1.07),
  - Strain/External Awareness scored: 3.35 (SD = 0.94).

Bivariate Correlations (Pearson)

- **Age & Age Squared**: Strong correlation (r = -0.044, p < .001).
- **Age**: Negatively associated with smartphone use (r = -.004, p < .05) and dependence (r = –.100 to –.111, p < .05).
- **Gender**: No significant correlation with outcomes; females showed a slight tendency for higher use and dependence.
- **Urban Residence**: Weak, non-significant associations with smartphone behaviors.
- **Smartphone Use & Dependence**: Positive correlation with overall dependence (r = .439, p < .001), emotional dependence (r = .368, p < .001), and strain dependence (r = .418, p < .001).
- **Nighttime Checking**: Positive correlation with higher use (r = 253**, p < .001), emotional (r = .272**, p < .001), and strain dependence (r = 0.248**, p < .001).
- **Phone Anxiety**: Positive correlation with all dependence measures (r = .366 to .393, p < .001).
- **Dependence Subscales**: Strong correlation between Emotional/Habitual and Strain/External Awareness (r = .584, p < .001).

Bivariate Correlations (Pearson)

Variable		1	2	3	4	5	6	7	8	9	10
Age	Pearson Correlation	1									
	Sig. (2-tailed)										
2. Age²	Pearson Correlation	-.044	1								
	Sig. (2-tailed)	.365									
3. Female (1 = Yes)	Pearson Correlation	-.067	.071	1							
	Sig. (2-tailed)	.172	.145								
4. Urban (1 = Urban)	Pearson Correlation	.029	.051	-.091	1						
	Sig. (2-tailed)	.559	.298	.063							
5.Smartphone Use (hours/day)	Pearson Correlation	-.004	-.069	.007	.044	1					
	Sig. (2-tailed)	.939	.160	.891	.367						
6. Night Check (1 = Yes)	Pearson Correlation	-.033	-.033	.083	-.060	.253**	1				
	Sig. (2-tailed)	.496	.496	.089	.216	.000					
7.Phone Anxiety (1 = Yes)	Pearson Correlation	-.059	-.021	.051	.034	-.002	.051	1			
	Sig. (2-tailed)	.224	.673	.301	.490	.971	.298				
8.Smartphone Dependence (Average Score)	Pearson Correlation	-.109*	.035	.083	.068	.395**	.283**	.053	1		
	Sig. (2-tailed)	.025	.473	.088	.167	.000	.000	.283			
9.Emotional Dependence (Factor 1)	Pearson Correlation	-.111*	.012	.074	.059	.373**	.272**	.033	.933**	1	
	Sig. (2-tailed)	.023	.807	.128	.230	.000	.000	.503	.000		
10.Strain Dependence (Factor 2)	Pearson Correlation	-.090	.056	.080	.066	.354**	.248**	.066	.910**	.699**	1
	Sig. (2-tailed)	.067	.254	.102	.174	.000	.000	.174	.000	.000	

***. Correlation is significant at the 0.05 level (2-tailed).**

****. Correlation is significant at the 0.01 level (2-tailed).**

Hierarchical OLS regression models predicting average smartphone dependence

- **Model 1**: Socio-demographics (age, gender, urban residence)
  - Small but significant variance explained (R^2 = .024, p < .05)
  - **Age** shows a curvilinear effect (↑ dependence with age, then levels off)
  - Gender & urban residence: non-significant

- **Model 2**: Adds **daily smartphone use**
  - Model fit improves significantly (R^2 = .179, p < .001)
  - Daily use is a strong predictor (b = 0.395, p < .001)
  - Age becomes significant; curvilinear pattern remains

- **Model 3**: Adds **nighttime checking** & **phone anxiety**
  - Further increase in variance explained (R^2 = .231, p < .001)
  - **Phone anxiety**: strong predictor (b = 0.137, p < .001)
  - **Night checking**: marginally significant (b = 0.166, p = .000)
  - Daily use remains a strong predictor (b = 0.325, p < .001)

Predictor	Model 1	Model 2	Model 3
Phone Anxiety (1=yes)			0.137 (0.003)***
Night Check (1=yes)			0.166 (0.000)*
Daily smartphone use		.395(000)***	0.325 (0.000)***
Urban (1=Urban)	0.077 (0.115)	.057(0.201)	0.072 (0.098)
Female (1=yes)	-0.082 (0.095)	.076(.0093)	-0.084 (0.145)
Age	-.105 (0.031)	-.102(.022)	-0.095 (0.028)*
Age²	-.021 (0.672)*	.049(.272)	.042(0.334)*
R^2	.024	.179	.231
Adjusted R^2	.015	.169	.218
F(df)	2.584 (415)*	18.08(414)***	17.664 (412)***
N	420	420	420
Constant	.361 (1.982)	-.746 (1.786)	-1.124 (1.678)

DISCUSSION

- **Universal Use**: 98.6% of students reported smartphone use; **46.2%** used phones 4–6 hours daily, consistent with global findings on rising smartphone addiction.

- **Multifunctional Use**: **50.4%** used smartphones for social media, research, news, and entertainment , reflecting worldwide trends in academic and social reliance on smartphones.

- **Emotional Dependence**: **81.9%** felt anxiety/distress when without their phones, indicating strong emotional attachment.

- **Physical Impact**: **18%** reported wrist/neck pain from prolonged use, highlighting the need for ergonomic awareness.

CONCLUSIONS

- **Rising Smartphone Dependency**: Students at the AAB College show increasing smartphone dependence, impacting daily life and well-being.
- **High Usage**: Many students use smartphones for approximately 6 hours/day, indicating a high potential for addiction.
- **Emotional Attachment**: Significant distress when away from smartphones highlights the emotional impact of overuse.
- **Physical Health Concerns**: Many students report musculoskeletal pain (e.g., neck, wrists) linked to excessive smartphone use.
- **Health Risks**: Both physical discomfort and mental distress underscore the potential health risks of smartphone addiction.

RECOMMENDATIONS

- **Awareness Campaigns**: Highlight risks of excessive smartphone use on health.
- **Workshops**: Educate students on healthy smartphone habits and screen time management.
- **Counseling Services**: Provide support for students struggling with smartphone addiction.
- **Regular Breaks**: Encourage phone-free breaks during study sessions for better focus.
- **Guidelines**: Establish responsible smartphone use, especially during classes.
- **Physical Activities**: Promote stretching and exercise to counteract long phone use.

REFERENCES

1. Abbasi, G. A., Jagaveeran, M., Goh, Y.-N., & Tariq, B. (2021). The impact of type of content use on smartphone addiction and academic performance: Physical activity as moderator. Technology in Society, 64, 101521. https://doi.org/10.1016/j.techsoc.2020.101521
2. Ali Raza, S., Qamar Yousufi, S., M. Tariq Rafi, S., & Tuba Javaid, S. (2020). Impact of Smartphone Addiction on Students' Academic Achievement in Higher Education Institute of Pakistan. Journal of Education & Social Sciences, 8(1), 1–14. https://doi.org/10.20547/jess0812008101
3. Axhami, L., & Axhami, M. (2023). Use of Information and Communication Technologies as a Medium for Education in Albania. International Journal of Information and Education Technology, 13(12), 1932–1938. https://doi.org/10.18178/ijiet.2023.13.12.2007
4. Banadaki, F. D., Rahimian, B., Moraveji, F., & Varmazyar, S. (2024). The impact of smartphone use duration and posture on the prevalence of hand pain among college students. BMC Musculoskeletal Disorders, 25(1), 574. https://doi.org/10.1186/s12891-024-07685-7
5. Chen, C., Krieger, M. L., & Sundar, S. S. (2021). Smartphones, robots, and social media: aging with communication technologies. In Handbook of the Psychology of Aging (pp. 139–153). Elsevier. https://doi.org/10.1016/B978-0-12-816094-7.00014-3
6. Dai, C., Tai, Z., & Ni, S. (2021). Smartphone Use and Psychological Well-Being Among College Students in China: A Qualitative Assessment. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.708970
7. Dissing, A. S., Jørgensen, T. B., Gerds, T. A., Rod, N. H., & Lund, R. (2019). High perceived stress and social interaction behaviour among young adults. A study based on objective measures of face-to-face and smartphone interactions. PLOS ONE, 14(7), e0218429. https://doi.org/10.1371/journal.pone.0218429
8. Enxhia Sala. (2024). The Descriptive Analysis of Breach Experience Among Smartphone Users in the Albanian Higher Education Sector. International Journal of Innovative Technology and Interdisciplinary Sciences, 7(3), 1–10.
9. Gath, M. E., Monk, L., Scott, A., & Gillon, G. T. (2024). Smartphones at School: A Mixed-Methods Analysis of Educators' and Students' Perspectives on Mobile Phone Use at School. Education Sciences, 14(4), 351. https://doi.org/10.3390/educsci14040351
10. Kil, N., Kim, J., McDaniel, J. T., Kim, J., & Kensinger, K. (2021). Examining associations between smartphone use, smartphone addiction, and mental health outcomes: A cross-sectional study of college students. Health Promotion Perspectives, 11(1), 36–44. https://doi.org/10.34172/hpp.2021.06
11. Kwon, M., Kim, D.-J., Cho, H., & Yang, S. (2013). The Smartphone Addiction Scale: Development and Validation of a Short Version for Adolescents. PLoS ONE, 8(12), e83558. https://doi.org/10.1371/journal.pone.0083558
12. Lee, Y.-K., Chang, C.-T., Lin, Y., & Cheng, Z.-H. (2014). The dark side of smartphone usage: Psychological traits, compulsive behavior and technostress. Computers in Human Behavior, 31, 373–383. https://doi.org/10.1016/j.chb.2013.10.047
13. Liu, H., Zhou, Z., Zhu, E., Huang, L., & Zhang, M. (2022). Smartphone addiction and its associated factors among freshmen medical students in China: a cross-sectional study. BMC Psychiatry, 22(1), 308. https://doi.org/10.1186/s12888-022-03957-5
14. Marín-Díaz, V., Muñoz-González, J. M., & Sampedro-Requena, B.-E. (2020). Problematic Relationships with Smartphones of Spanish and Colombian University Students. International Journal of Environmental Research and Public Health, 17(15), 5370. https://doi.org/10.3390/ijerph17155370
15. OSMANI BALLAZHI, S., NEZIRI, I., BEXHETI, L., & SOTIROSKA, K. (2024). DETERMINATION OF THE RISK FACTORS ASSOCIATED WITH PROBLEMATIC SOCIAL MEDIA USE AMONG ADOLESCENTS OF ALBANIAN AND MACEDONIAN DESCENT IN NORTH MACEDONIA. International Journal of Social and Human Sciences-PHILOSOPHICA, 11(22–23), 167–177. https://doi.org/10.62792/ut.philosophica.v11.i22-23.p2733
16. Osorio-Molina, C., Martos-Cabrera, M. B., Membrive-Jiménez, M. J., Vargas-Roman, K., Suleiman-Martos, N., Ortega-Campos, E., & Gómez-Urquiza, J. L. (2021). Smartphone addiction, risk factors and its adverse effects in nursing students: A systematic review and meta-analysis. Nurse Education Today, 98, 104741. https://doi.org/10.1016/j.nedt.2020.104741
17. Phukan, I., Chetia, A., & Mahanta, B. (2022). Smartphone addiction and associated risk factors amongst undergraduate medical students in a medical college of Assam: a cross-sectional study. International Journal Of Community Medicine And Public Health, 9(5), 2085. https://doi.org/10.18203/2394-6040.ijcmph20221027
18. Przybylski, A. K., & Weinstein, N. (2017). A Large-Scale Test of the Goldilocks Hypothesis. Psychological Science, 28(2), 204–215. https://doi.org/10.1177/0956797616678438
19. TAKING TEMPORARY MEASURES TO AVOID THE NEGATIVE IMPACTS OF THE "TIKTOK" ONLINE PLATFORM, Pub. L. No. 54/2024, Decision of the Council of Ministers (2025).
20. Tandon, A., Dhir, A., Almugren, I., AlNemer, G. N., & Mäntymäki, M. (2021). Fear of missing out (FoMO) among social media users: a systematic literature review, synthesis and framework for future research. Internet Research, 31(3), 782–821. https://doi.org/10.1108/INTR-11-2019-0455
21. Thomée, S. (2018). Mobile Phone Use and Mental Health. A Review of the Research That Takes a Psychological Perspective on Exposure. International Journal of Environmental Research and Public Health, 15(12), 2692. https://doi.org/10.3390/ijerph15122692
22. Zhang, X., Gao, F., Kang, Z., Zhou, H., Zhang, J., Li, J., Yan, J., Wang, J., Liu, H., Wu, Q., & Liu, B. (2022). Perceived Academic Stress and Depression: The Mediation Role of Mobile Phone Addiction and Sleep Quality. Frontiers in Public Health, 10. https://doi.org/10.3389/fpubh.2022.760387
23. Zhang, X., Huang, H., Zhao, S., Li, D., & Du, H. (2025). Emotional exhaustion and turnover intentions among young ICU nurses: a model based on the job demands-resources theory. BMC Nursing, 24(1), 136. https://doi.org/10.1186/s12912-025-02765-y

Thank you for your attention!