Effect of Nomophobia on Social Isolation and Students' Academic Performance Among Nursing Students

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Abstract

Background: Smartphone ownership and use are markedly increased, with potential problems for university students such as nomophobia and social isolation. ***Aim of the study***: to identify the effect of nomophobia on social isolation and students' academic performance among nursing students. ***Subjects and Methods***: This cross-sectional study was carried out on 200 nursing students in Ismailia Governorate, Egypt. Data was gathered through A self-administered questionnaire, A nomophobia Scale, Social Isolation, and academic performance scales. ***Results***: The sample had equal gender distribution, and 48.0% owned their smartphones for >5 years. Overall, 80.0% had high nomophobia, 33.0% had high social isolation, and 48.5% had high academic performance. Social isolation and nomophobia were positively correlated, and academic performance was negatively correlated to both. Nomophobia and social isolation are positively correlated to smartphone and net ownership and use. The frequency of use is an independent positive predictor of the scores of nomophobia and social isolation and a negative predictor of academic performance. ***Conclusion and Recommendations***: Nomophobia is extremely common among nursing students using smartphones in the study setting, with a detrimental impact on both their academic performance and social isolation. The study recommends more efforts from nursing schools to deal with the problems associated with excessive use of smartphones through workshops and seminars. Counseling and support services should be offered to students experiencing high levels of nomophobia or social isolation. Further research is suggested to longitudinally explore the long-term effects of nomophobia on nursing students' academic and professional performance, along with related intervention studies.

Keywords: *Smartphones, Nomophobia, Social isolation, Academic performance, Nursing students*

Introduction

A smartphone is a device that combines computer capacity with mobile communication technologies. Smart mobile phones (SMPs) integrate the functions of smartphones and computers into a single device. (**Jahrami et al., 2022**). With the rise in smartphone ownership and the proliferation of its applications, the duration of time spent using such devices is increasing by the day. Excessive usage of mobile phones, notably smartphones, has raised worries among university students and their parents (**Özbay et al., 2023**).

Considering smartphones are inexpensive and facilitate communication, over half of the worldwide population owned one in 2019. People appear to prefer indirect contact and perform better in virtual reality because they feel safer beyond a screen. This results in less social engagement outside of the virtual world. This shift from in-person interaction to "social media" has started to harm by encouraging addictive habits. (**Copaja-Corzo et al., 2022)**.

Nomophobia (also known as "no mobile phone phobia") can result from excessive mobile phone use. According to **Gentina et al. (2023)**, the fear of not being able to communicate via cell phone is an illogical phobia rather than a behavioral addiction. Another definition of nomophobia is separation anxiety from a smartphone, which makes the user seek out the phone's existence (**Mohapatra et al., 2023**).

The prevalence of nomophobia ranges from 6% to 73% among various populations; it is predicted to increase, becoming a major problem, due to the massive use of smartphones ***(Tuco et al., 2023)***. This problem is more common in teens and young adults, which is consistent with university students who suffer from severe nomophobia at high rates (**Humood et al., 2021**). The tendency is predicted to grow as technology advances and cellphones become more desirable with capabilities that allow for persistent connectivity anywhere, at any time (**Gentina et al., 2023)**.

Although nomophobia can occur at any age, adolescents and young adults, particularly college students, are more prone to engage in problematic mobile phone use (PMPU)) because they have more free time, less self-control, and more needs related to their identities and lifestyles (including social contact, online learning, gaming, and shopping) (**Buctot et al., 2021)**. Thus, nomophobia is a public health issue that requires attention (**Takieddin et al., 2022)**.

Furthermore, smartphones' accessibility and versatility may assist consumers in not only accessing online entertainment, but also establishing virtual social connections. As a result, those who are lonely may consider cellphones as their primary means of feeling connected and belonging. However, this could be a double-edged sword; as such people may become overly reliant on cellphones (**Shen and Wang, 2019**). Social isolation was an important predictor for broad-based morbidity and death, including smoking, obesity, sedentary lifestyle, and high blood pressure (**Cheng et al., 2022; Chen et al., 2023)**.

"Inadequate quantity and quality of social relations with others at the different levels where human interaction takes place (individual, group, community, and the larger social environment)" is the definition of social isolation ***(Ray et al., 2019)***. The objective state of having few or infrequent social interactions is often referred to as social isolation (**National Academy of Sciences Engineering and Medicine, 2020)**. Numerous facets of a student's social, academic, professional, and psychological lives might be adversely affected by nomophobia (**Gurbuz and Ozkan, 2020)**. Socially isolated people shift the majority of their social interactions from the actual world to the virtual one, preferring virtual contact over face-to-face encounters in order to prevent feelings of anxiety and fear **(Valenti, Bottaro, and Faraci, 2022)**.

Academic performance is assessed by determining how much has been accomplished over a set period of time (**von Stumm et al., 2021**). Finding a student's cumulative grade point average (GPA) is the most popular and straightforward method of assessing their academic success; a higher GPA number denotes better academic achievement **(Buctot et al., 2021)**. Research on students at different educational levels indicates that nomophobia significantly affects GPA. High academic achievement was reported by students who did not suffer from nomophobia (**Durak, 2019; Essel et al., 2021)**. Nomophobic students may display suspicious

habits that hinder their ability to think clearly and focus, which can have a major negative influence on their academic progress. A systematic review found that excessive smartphone use is significantly associated with poor academic achievement among students. Additionally, it causes negative psychological symptoms such as worry and low self-esteem (**Devi and Dutta, 2022)**.

Many therapists are ignorant of nomophobia that affects students' daily live and are thus unprepared for treatment requiring efforts to deal with this issue **(Safaria e al., 2024).** The nurse practitioner responds to nomophobia with clinical and preventive intervention as she provides cognitive behavioral therapy and other interventions that improve insight in to student nomophobia actions **(Morant, 2023).** In this field, nurses must take on the crucial roles of care, educator, Health promotion, therapist, counselor, supervisor, researcher and specialty consultant. Nurses can play an effective role not only in the assessment, diagnosis and treatment of nomophobia, but also in the prevention of this phenomenon **(Manshaee et al., 2021).**

Significance of the Study

The adoption of technology is a major force of human progress. However, internet addiction and smartphone use can have a negative impact on students' academic achievement, along with their physical and psychosocial health. One of the biggest concerns linked with the use of the internet and smartphones is nomophobia, which increases the risk of personality disorders, loneliness, and social isolation, as well as having a detrimental impact on self-esteem and academic performance. As a result, it was deemed to identify the prevalence of nomophobia among nursing students and examine its relationship to these problems.

AIM OF THE STUDY

The study aims to identify the effect of nomophobia on social isolation and students' academic performance among nursing students.

Research Questions:

1. What is the prevalence and level of nomophobia among nursing students?
2. Is there relationship between nomophobia and student' academic performance in nursing students?
3. Is there relationship between nomophobia, social isolation and students' academic performance in nursing students?

SUBJECTS AND METHODS

Research design: The present research was conducted using an analytic cross-sectional study design in which the dependent and independent variables were measured at the same time to determine their correlations.

Study Setting: a study was carried in the Ismailia Governorate's Mostaqbal City, a combined nursing school for male and female. The school consists of two floors. In the first floor, the right side is designated for school's employees and teaching staff, and a computer lab. The left side of the first floor and the second floor include classrooms, laboratories, and small rooms for teaching practical subjects.

Study Subjects: *Sample criteria*: All the nursing students that participate in Ismailia Governorate's Mostaqbal City Nursing School in the academic year 2022/2023 composed the sampling population for this study. The students were eligible for selection in the study sample according to the inclusion criterion of being full-time students at the school during this academic year and having a smartphone. No exclusion criteria were set.

Sample size: The sample size was established to detect a correlation coefficient r=0.22 or more (small effect size according to ***Brydges, (2019***) among the scores of nomophobia on social isolation and students' academic performance. The necessary sample size was 159 using the G*Power software tool, Version 3.1.9.4 at 80% power and 95% confidence level. To account for an anticipated nonresponse rate of about 20%, this was raised to 200 students.

Sampling technique: Students were selected from the sampling population based on their eligibility using a stratified random sampling technique. The three academic years made up the first stratum (academic years). In order to guarantee that males and females are fairly represented in the study sample, the researchers

employed a basic random sampling technique to choose students from each stratum during an academic year. This was done for the second stratum, which is gender.

Tools of data collection: A self-administered questionnaire with three different tools was used to collect data as follows:

▪ ***Tool I***: Nomophobia scale: this consisted of the subsequent parts:

Part I: Demographic data: The researchers created this part to gather demographic information about nursing school students, including school year, age, gender, residence, parents' educational level, and family income.

Part II: This was concerned with the details of owned a smartphone, frequency of check your smartphone each day, period of smartphone internet ownership, and period to access the internet every day.

Part III: ***Nomophobia Scale (NMP-Q)****:* **Yildirim and Correia (2015)** created this scale to measure nomophobia. These fall under four categories: losing connectedness (5 items), giving up convenience (5 items), inability to communicate (6 items), and inability to gain information (4 items). A higher score denotes a more severe case of nomophobia. It consists of 20 items with responses on a 5-point Likert scale from "Never" to "Always," with scores ranging from 1 to 5. If the percentage score was 60% or above, nomophobia was deemed strong; if it was less than 60%, it was deemed mild.

▪ ***Tool II***: ***Social Isolation Scale***: was created by ***Hawthorne (2006)*** to evaluate social isolation among nursing students. It consists of 15 questions. For each question, the scores vary between 0 and 5, with 5 being the highest possible. The score of each question was normalized by division by 5 so that each question's score varied from 0 to 1, with a higher score denoting more social isolation. Simple summation was used to determine the scale's overall score, which was then translated into a percentage score. The student's social isolation was regarded as low if the percentage score was below 80% and high if it was 80% or more.

▪ ***Tool III: Academic Performance Scale***: It was created by ***Christopher McGregory et al. (2015)*** to assess the academic performance of nursing students. It has eight items with scores ranging from 1 to 5 and ratings on a 5-point Likert scale from "Never" to "Always." The scale's overall score was calculated using simple summation, producing a numerical number between 5 and 40, where a higher score denotes better performance. If the percentage score was 60% or more, the academic performance was deemed high; if it was less than 60%, it was deemed low.

Tools' validity and reliability: Data gathering tools are standardized, and their validity and reliability have been proven. Nonetheless, a jury group of psychiatric nursing specialists was asked to provide feedback on the instruments' relevance and clarity. The reliability of the scales utilized was assessed by analyzing their internal consistency for the first and third tools, as well as inter-rater reliability for the second tool (social isolation). The tools showed high levels of reliability, with Cronbach's alpha coefficients of 0.967 for the nomophobia scale and 0.947 for the academic performance scale. The social isolation scale had a Kappa coefficient of 0.37, indicating Fair agreement.

Fieldwork: After obtaining all necessary administration approvals to conduct the study, the researchers met with the nursing school director to establish an appropriate time to collect data. Then they met with the students to explain the purpose of the study, the data gathering technique, and their rights. Those who supplied verbal informed agreement to participate were given questionnaires to fill out. They were given detailed instructions on how to complete out the required forms. The researchers were always available to answer any questions. The time spent for filling out the forms ranged from 15-20 minutes. The questionnaire sheet was completed at the same time of distribution. The researcher followed the same method with the students during the first, second, and third academic years. The researchers met students on Sunday, Tuesday, and Thursday of each week. The tools were provided to the subjects between 10 a.m. and 2 p.m., based on the students' free time. They then collected the filled forms after checking for their completeness. The data collection process lasted three months, beginning in October 2022 and ending at the end of December.

Administrative design and ethical considerations: The study protocol was authorized by the Nursing Research Ethics Committee of Zagazig University's Faculty of Nursing under the code number M.DZU.NUR/168/15/3/2022. The researchers met with every participant in the study confidentially to clarify

the purpose of the research and get verbal informed consent to participate. They were promised that any information acquired would be kept private and confidential, and that it will be used exclusively for scientific purposes.

Statistical analysis: Data entry and statistical analysis were carried out using the SPSS 20.0 statistical software package. The categorical variables were compared using chi-square testing. Spearman rank correlations were utilized to analyze the links between quantitative and ranked variables. Multiple linear regression analysis was utilized to find independent predictors of students' nomophobia, social isolation, and academic performance ratings. Full regression models were also analyzed for variance. Statistical significance was determined at a p-value < 0.05.

RESULTS

The study sample comprises 200 students, mostly younger than 18 years old, with an equal gender distribution, as presented in Table 1. Slightly more than half (55.5%) had urban residences. Around one-third of the students had their parents carrying a university degree, and the majority (80.0%) had sufficient income. Slightly more than half (51.0%) of the students were in the second academic year.

According to Table 2 approximately half (48.0%) of the students had owned their smartphones for over five years, with slightly more than half using them more than 50 times per day. Similarly (43.5%) of the participants had an internet connection on their smartphones for more than five years, and 73.0% utilized it for four or more hours every day.

Table 3, Figure (1) indicates high levels of nomophobia among the students in the study sample. The percentages with high nomophobia ranged from 76.0% for the inability to access information to 81.0% for giving up convenience. The majority (80.0%) of students had high total nomophobia.

Figure 2 displays, only one-third (33.0%) of the students in the study sample had high social isolation.

Figure 3 reveals that approximately half (48.5%) of the students in the study sample had high academic performance.

As for the relationships between students' academic performance and their nomophobia dimensions, Table 4 points to statistically significant relations with all nomophobia dimensions as well as with its total ($p<0.001$). In all these relations, academic performance decreased with nomophobia. It also shows that academic performance decreased with social isolation.

Table 5 illustrates a statistically significant weak positive correlation between total nomophobia and social isolation ($r=0.266$). Meanwhile, academic performance had statistically significant moderate negative correlations with nomophobia and social isolation. The table also shows statistically significant weak negative correlations between students' academic performance and their school year and family income, and moderate negative correlations with their smartphone and net ownership and use. Conversely, their nomophobia and social isolation had significant moderate positive correlations with their smartphone and net ownership and use, with the strongest correlation between nomophobia and smartphone net daily hours ($r=0.548$).

Table 6 clarified that the most significant independent positive indicators of students' nomophobia scores were smartphone net years and smartphone net daily hours. Conversely, their smartphone ownership years, age, and female gender were all negative indicators. The model accounts for 45% of the variation in the nomophobia score. As for the students' social isolation scores, the table indicates that their statistically significant independent positive predictors were their smartphone ownership years and frequency of use. On the other hand, their female gender, rural locality, and income were all negative indicators. The model accounts for 33% of the variation in this score. In terms of students' academic performance scores, fathers' university education was the sole statistically significant independent positive predictor. In contrast, smartphone net daily hours, as well as nomophobia and social isolation ratings, were all negative indicators. The model accounts for 55% of the variation in this score.

Table 1: Demographic characteristics of students in the study sample (n=200)

items	Frequency	Percent
Age:		
<18	131	65.5
18+	69	34.5
Gender:		
Male	100	50.0
Female	100	50.0
Residence:		
Rural	89	44.5
Urban	111	55.5
Father university education:		
No	128	64.0
Yes	72	36.0
Mother university education:		
No	125	62.5
Yes	75	37.5
Family income:		
Insufficient	40	20.0
Sufficient/saving	160	80.0
School year:		
1	31	15.5
2	102	51.0
3	67	33.5

Table 2: Smartphone utilization as reported by students in the study sample (n=200)

items	Frequency	Percent
Smartphone ownership years:		
1-2	32	16.0
3-4	72	36.0
5+	96	48.0
Daily Smartphone use times:		
<50	96	48.0
50+	104	52.0
Smartphone net years:		
<5	113	56.5
5+	87	43.5
Smartphone net daily hours:		
<4	54	27.0
4+	146	73.0

Table 3: Nomophobia, social isolation, and academic performance among students in the study sample (n=200)

items	Frequency	Percent
Nomophobia:		
Inability to access information	152	76.0
Giving-up convenience	162	81.0
Inability to communicate	157	78.5
Losing connectedness	153	76.5
Total nomophobia:		
High	160	80.0
Low	40	20.0

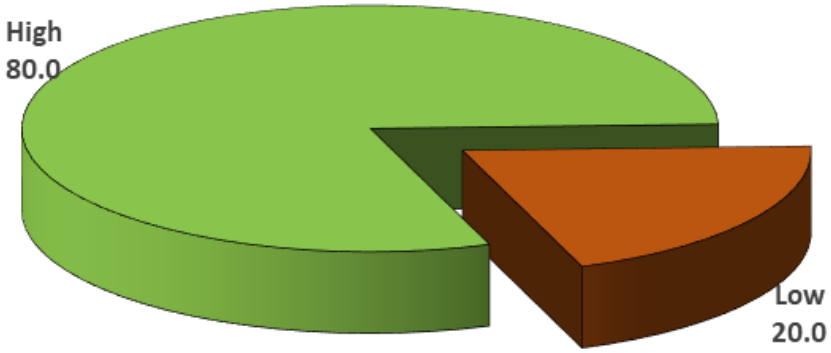

Figure 1: Total nomophobia among students in the study sample (n=200)

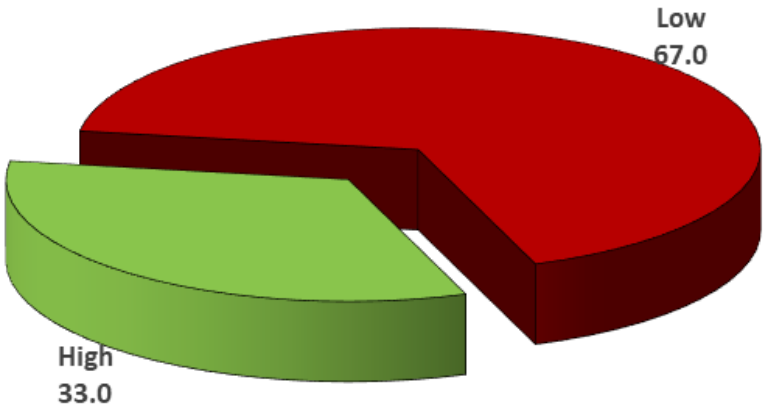

Figure 2: Social isolation among students in the study sample (n=200)

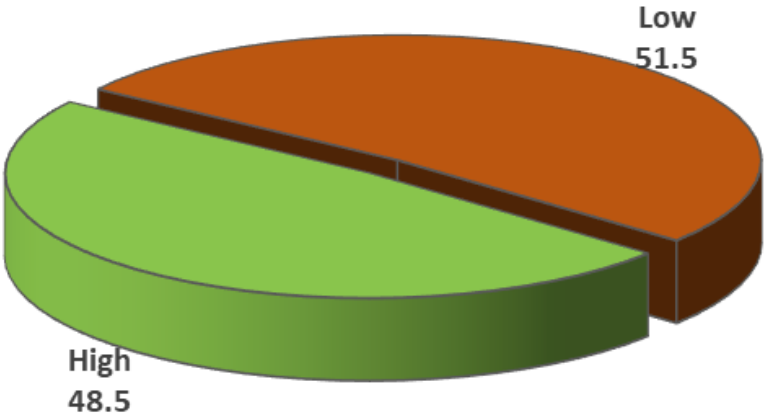

Figure 3: Academic performance among students in the study sample (n=200)

Table 4: Relations between students' nomophobia, social isolation and academic performance

Nomophobia	Academic performance				X^2 test	p-value
	High		Low			
	No.	%	No.	%		
Inability to access information;						
High	59	38.8	93	61.2		
Low	38	79.2	10	20.8	23.78	<0.001*
Giving-up convenience;						
High	62	38.3	100	61.7		
Low	35	92.1	3	7.9	35.713	<0.001*
Inability to communicate:						
High	62	39.5	95	60.5		
Low	35	81.4	8	18.6	23.731	<0.001*
Losing connectedness:						
High	60	39.2	93	60.8		
Low	37	78.7	10	21.3	22.469	<0.001*
Total nomophobia:						
High	61	38.1	99	61.9		
Low	36	90.0	4	10.0	34.476	<0.001*
Social isolation:						
High	9	13.6	57	86.4		
Low	88	65.7	46	34.3	47.936	<0.001*

(*) Statistically significant at p<0.05

Table 5: Correlations between students' scores of nomophobia, social isolation, and academic performance and their characteristics

	Spearman's rank correlation coefficient		
	Nomophobia	Social isolation	Academic Performance
Nomophobia	1.000		
Social isolation	.266**	1.000	
Academic performance	-.436**	-.531**	1.000
Characteristics:			
Age	-.102	-.018	-.055
School year	.083	.081	-.147*
Father education	.167*	.108	.077
Mother education	.131	.061	.027
Family income	.099	.104	-.161*
Smartphone ownership years	.227**	.375**	-.492**
Smartphone daily use times	.507**	.519**	-.508**
Smartphone net years	.345**	.401**	-.535**
Smartphone net daily hours	.548**	.347**	-.609**

(*) Statistically significant at p<0.05 *(**) Statistically significant at p<0.01*

Table 6: Best fitting multiple linear regression model for the nomophobia score

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
Nomophobia							
Constant	153.91	29.07		5.294	<0.001	96.57	211.25
Age	-4.68	1.73	-0.15	2.704	0.007	-8.09	-1.27
Female gender	-7.41	1.71	-0.25	4.331	<0.001	-10.78	-4.03
Smartphone ownership years	-5.20	1.41	-0.42	3.689	<0.001	-7.97	-2.42
Smartphone net years	7.25	1.42	0.60	5.119	<0.001	4.46	10.05
Smartphone net daily hours	5.13	1.09	0.37	4.692	<0.001	2.97	7.28
r-square=0.45 Model ANOVA: F=32.15, p<0.001 Variables entered and excluded: year, residence, income, parents' education							
Social isolation							
Constant	73.45	3.85		19.072	<0.001	65.86	81.05
Female gender	-5.46	1.30	-0.27	4.210	<0.001	-8.02	-2.90
Rural residence	-2.16	1.25	-0.10	1.732	0.085	-4.62	0.30
Income	-3.48	1.62	-0.14	2.151	0.033	-6.67	-0.29
Smartphone ownership years	1.85	0.68	0.21	2.737	0.007	0.52	3.18
Smartphone frequency of use	2.99	0.75	0.31	3.991	<0.001	1.51	4.46
r-square=0.33 Model ANOVA: F=18.85, p<0.001 Variables entered and excluded: age, year, parents' education, years having net, nomophobia score							
Academic performance							
Constant	172.59	9.36		18.442	<0.001	154.13	191.04
Father university education	4.72	2.26	0.10	2.085	0.038	0.26	9.18
Smartphone net daily hours	-7.83	1.26	-0.37	6.218	<0.001	-10.31	-5.35
Nomophobia score	-0.35	0.09	-0.23	4.014	<0.001	-0.53	-0.18
Social isolation score	-0.77	0.11	-0.35	6.815	<0.001	-0.99	-0.54
r-square=0.55 Model ANOVA: F=58.58, p<0.001 Variables entered and excluded: age, gender, year, residence, income, mother education, frequency of use, years having net							

DISCUSSION

This study aims to identify the effect of nomophobia on social isolation and students' academic performance among nursing students. The results revealed a high prevalence of nomophobia, with a relatively low prevalence of social isolation. These were positively correlated to smartphone and net ownership and use and negatively correlated to academic performance. Smartphone frequency of use positively predicted students' nomophobia scores and social isolation and negatively predicted their academic performance. The findings provide clear answers to the research questions.

Regarding the study findings, around one-half of the students had owned their smartphones and had their smartphones connected to the internet for more than five years. This long time could increase their risk of having nomophobia. In support of this, the study results revealed that nomophobia in all its dimensions significantly increased with years of smartphone ownership and years of internet connection. These are in line with ***Çatıker et al. (2022)*** whose study in Turkey clarified that around one-third of these nursing students owned smartphones for more than six years. Additionally, more than half used their smartphones more than 50 times per day, mostly for four or more hours a day. This considerably high frequency of use would lead to many interruptions during their study and family and social life times, with negative impacts on both. In line with this, a study of the connection between smartphone use and nomophobia for young adults in the United States reported that more than two-thirds of the participants were using their smartphones for over four hours a day ***(Gonçalves et al., 2020)***.

Approximately four-fifths of the participants in the present study sample had high total nomophobia. This is an alarming and extremely high percentage of this disorder given its potential negative impacts on their physical and mental wellbeing, and consequently on their academic performance. In line with this, **Gutiérrez-Puertas et al. (2019)** conducted a nomophobia study among nursing students in Spain and Portugal. The majority of subjects scored above average for nomophobia. Similarly, a quasi-experimental investigation evaluating the influence of smartphone use on Spanish nursing students' learning and concentration in class showed higher than average levels of nomophobia among them. ***(Gutiérrez-Puertas et al., 2020)***. Additionally, 82.7% of nursing students at six Egyptian colleges reported having moderate to severe nomophobia, according to a study by ***(Hamzaa et al., 2024)***.

On the other hand, an observational study of nomophobia within Spanish nursing students and its association with social anxiety revealed significantly lower levels, which is in contrast to the current study's conclusion of an elevated level of nomophobia in nursing students.Thus, only around one-fifth of these students had nomophobia behavior or were at high risk of developing it ***(Tárrega-Piquer et al., 2023)***. The difference between the two settings' social norms and characteristics may be the cause of the disparity with the current study's findings.

The multivariate analysis identified smartphone net daily hours and net years as significant independent positive predictors of the nomophobia scores. Moreover, nomophobia had significant positive correlations with smartphone and net ownership years and frequency of use. This could be due to higher dependence with longer ownership and more frequent use. However, the effect of smartphone ownership years was reversed, being identified as a negative predictor. This might be explained by the fact that the students having fewer ownership years could have more advanced phones and applications, which would increase their nomophobia. The findings are in congruence with the results of a study of nomophobia prevalence and its correlates among Bangladeshi students ***(Al-Mamun et al., 2023)*** were positive connections discovered between nomophobia, years of owning smartphone, and hours of use. Similar associations were also reported in studies in China ***(Xie and Luo, 2024)***, and Greece ***(Vagka et al., 2024)***.

Furthermore, the multivariate analysis revealed that the nomophobia score was negatively predicted by female gender and older age. The negative effect of age could be attributed to more maturation with less use and dependence on the smartphone. As for the effect of gender, the results confirm that male students had a noticeably higher level of nomophobia. This is expected assuming the prevailing norms and behaviors in the study's community, where male adolescents might have more freedom; they are more likely to access adult

internet sites. Similar associations with age and gender were also demonstrated in a study of nomophobia among African health professionals ***(Shah et al., 2024)***. On the same line, male students scored around six times higher than female students in a study by **Janatolmakan et al. (2024)** on nomophobia and associated factors among Iranian nursing students.

The current study has also clarified that one-third of nursing students had a high level of social isolation. Although this might seem to be a reasonable level of social isolation, it is still high at this age and stage of life, where social life is developing and gaining more importance among youth .In congruence with this study, (**Hussien ,2022**) who conducted research on loneliness and nomophobia in Saudi Arabia's general population, and discovered that somewhat more than one-third of the participants exhibit moderate levels of loneliness. Furthermore, social isolation was a substantial risk factor for broad-based morbidity and death, like smoking, obesity, sedentary lifestyle, and high blood pressure. ***(Cheng et al., 2022; Chen etal., 2023)***.

Considering, sociodemographic characteristics influencing nursing students' social isolation, the current study found that male students had a significantly greater prevalence. This was supported in the multivariate analysis, which revealed that female gender is a negative predictor of social isolation score. The finding could be related to the increased use of smartphones among male students, which is associated with much higher levels of nomophobia. In support, the findings revealed that nomophobia and social isolation scores were strongly and positively associated. The findings are consistent with ***Penning et al., (2022)*** reported that men are more likely to be socially lonely, but emotional loneliness is seen more in women.

In the current study, smartphone ownership years and frequency of internet use were identified as significant positive predictors of the social isolation scores. This might be explained by the fact that more frequent use of smartphones and connected internet would encroach on students' time for other activities and participation in social events or encounters. Moreover, the scores of nomophobia and social isolation were found to be positively and strongly connected. These findings are consistent with a review of how smartphone addiction affects college students (**Amin et al., 2024**). Similarly, a study on smartphone addiction and wellbeing among college students in China showed that smartphone addiction was positively correlated to social isolation and loneliness ***(Su and He, 2024)***. Similarly, a systematic review concluded that smartphone addiction leads to social isolation by hindering face-to-face communication with others ***(Nodir o'g'li et al., 2024)***.

The multivariate analysis has also identified income as a negative predictor of the social isolation score. This result is quite logical since a higher income would encourage students to participate in social events and increase their participation, thus decreasing their social isolation. On the opposite, a study that noticed the relationship between loneliness and nomophobia in Saudi Arabians found that loneliness and age and education level were negatively correlated (**Hussien, 2022**). One of the more distant (structural) causes of loneliness is education, which is mostly connected to it through other elements like social networks or financial resources (**Barjaková et al.,2023**).

The present study has also assessed nursing students' academic performance. The results indicated that approximately one-half of these students had high performance. Nonetheless, this was based on a self-reporting scale rather than actual GPA, which might be affected by the self-reporting bias. In line with this, a study on nomophobia and its relationship to academic achievement among Saudi Arabian physiotherapy students found that over two-thirds of the group performed well academically, with a total GPA ranging from 3.5 to 4.4 **(Aldhahir et al., 2023)**.

The results confirmed that the years of smartphone years of smartphone ownership and the frequency and duration of internet use were negatively correlated to academic performance scores. Furthermore, the multivariate analysis identified smartphone net daily hours as a negative indicator of students 'academic achievement scores. These findings may be attributed to the time lost with smartphone use at the expense of the time for study. This result congruent with ***Sapci etal ., (2021)*** reported that Students who use their smartphones excessively may become distracted, be less productive, and perform worse academically as a result.

However, a more nuanced perspective is provided by **Savitsky et al. (2020)**, they recommend moderate internet usage for enjoyment may act as a stress-relieving mechanism and improve academic performance.

Nevertheless, they point out that excessive use might lead to internet addiction and negatively affect academic achievement.

Furthermore, fathers' education was found to be the only positive predictor of the students' academic performance among the sociodemographic factors impacting it. In contrast with this, only substantial gender differences in the degree of influence on academic performance were discovered in a study undertaken in Saudi Arabia to identify the factors influencing student nurses' academic achievement. However, there were no notable variations by age, marital status, or socioeconomic position, according to **(Alshammari et al. 2018)**.

Conversely, a Saudi Arabian study by **Alsaggaf et al. (2019)** discovered that medical students' academic performance was negatively correlated with their sleep quality. Moreover, negative correlations were demonstrated between students' academic performance and family income, which might be explained by the lower likelihood of ownership of high-quality smartphones and of access to the internet among those with insufficient income. This would give them more time for studying. In congruence with this, a study in Bangladesh, Clarified that insufficient financial support or a lack of basic resources for learning may lead to diminished motivation to study (**Uddin, 2017**). However, **Olufemi, Adediran, and Oyediran (2018)** in Nigeria take a more nuanced approach, arguing that factors such as student motivation and good studying habits can minimize the effects of socioeconomic position on academic achievement.

The present study has also showed that students' nomophobia had a negative impact on their academic performance. Hence, there were notable negative connections between academic performance scores and all aspects of nomophobia as well as the total score, and the multivariate analysis supported this, with the nomophobia score found as a negative predictor of academic achievement. As a result, it may serve as a mediator in the harmful impact of smartphone use on students' academic performance. A similar detrimental effect of nomophobia on academic performance was documented in a study in Ghana, where the lack of nomophobia was substantially associated with excellent academic performance (**Essel, Vlachopoulos &Tachie-Menson,2021**).

Conversely, **Farooq et al., (2022)** found that loneliness, low self-esteem, and self-happiness were more common among students who had higher levels of nomophobia. These nomophobic students are prone to have difficulties in their academic performance. In a similar vein, a Saudi Arabian study discovered that students who studied the most during the week and had the best GPA also had the highest nomophobia scores (**Aldhahir et al.,2023**).However, a study on the incidence of nomophobia among college students revealed no meaningful connections between nomophobia and GPA (**Al-Mamun et al.,2023**).

Finally, social isolation has a considerable impact on students' academic performance. Thus, students with high levels of social separation performed better academically, as well as having a strong negative connection between academic performance and social isolation scores. Furthermore, the social isolation score was found to be an independent negative predictor of academic achievement. This could be explained by the fact that socially isolated students may have more time to study, resulting in improved academic achievement. In agreement with this, a study of loneliness and academic performance among Iranian university students found a negative relationship between students' scores of loneliness and their academic performance scores ***(Alinejad et al., 2022)***. In contrast to this, a research investigating the impact of social isolation on adolescents' development in India found that social isolation is connected with lower academic performance ***(Kumar et al., 2023)***. Hence, this relationship needs further research.

CONCLUSION AND RECOMMENDATIONS

In conclusion, nomophobia is extremely common among nursing students who use smartphones, with a detrimental impact on both their academic performance and social isolation. Nomophobia and social isolation are positively correlated with smartphone and net ownership and use. The frequency of use is an independent positive indicator of the scores of nomophobia and social isolation and a negative predictor of academic performance. Other influencing factors include students' age, gender, residence, family income, and fathers' education.

The study recommends more efforts from nursing schools to deal with the problems associated with excessive use of smartphones. These involve workshops and seminars to educate students about nomophobia and its effects, and extracurricular activities to limit time spent on their smartphones, along with the establishment of clear policies and guidelines for smartphone use during academic activities. Further research is suggested to longitudinally explore the long-term effects of nomophobia on nursing students' academic and professional performance, along with related intervention studies.

Limitations of the study:

To gain greater generalizability of the results and the association between the variables, the sample size must be raised, with a bigger representative sample drawn from several Egyptian governorates.

References

Aldhahir AM, Bintalib HM, Siraj RA, Alqahtani JS, Alqarni OA, Alqarni AA, et al.(2023) : Prevalence of Nomophobia and Its Association with Academic Performance Among Physiotherapy Students in Saudi Arabia: A Cross- Sectional Survey. J Multidiscip Healthc. Jul 25;16:2091-2100. doi: 10.2147/JMDH.S415891. PMID: 37521365; PMCID: PMC10386831.

Alinejad V., Parizad N., Yarmohammadi M., and Radfar M. (2022): Loneliness and academic performance mediates the relationship between fear of missing out and smartphone addiction among Iranian university students. BMC Psychiatry.;22(1):550. doi: 10.1186/s12888-022-04186-6. PMID: 35962328; PMCID: PMC9372955.

Al-Mamun F., Mamun M.A., Prodhan M.S., Muktarul M., Griffiths M.D., Muhit M., and Sikder M.T. (2023): Nomophobia among university students: Prevalence, correlates, and the mediating role of smartphone use between Facebook addiction and nomophobia. Heliyon.;9(3):e14284. doi: 10.1016/j.heliyon.2023.e14284. PMID: 36942222; PMCID: PMC10023918.

Alsaggaf, M. A., Wali, S. O., Merdad, R. A., & Merdad, L. A. (2019): Sleep quantity, quality, and insomnia symptoms of medical students during clinical years: Relationship with stress and academic performance. Saudi Medical Journal, 40(1), 33-38.

Alshammari, F, Saguban, R, Pasay-an, E, Altheban,A , Al-Shammari, L (2018): Factors affecting the academic performance of student nurses: A cross-sectional study, Journal of Nursing Education and Practice; Vol. 8, No. 1: 60-68 https://doi.org/10.5430/jnep.v8n1p60.

Amin N.A.F.M., Ismail T.N.N.T., Ponnuraj K.T., and Shahidan W.N.S. (2024): Psychosocial Impact of Smartphone Addiction among University Student: A Review. Malaysian Journal of Medicine and Health Sciences; 20(1): 343-358.

Bauer C.A., Walton G., Job V., and Stephens N. (2025): The strengths of people in low-SES positions: An identity-reframing intervention improves low-SES students' achievement over one semester. Social Psychological and Personality Science; 16(1): 45-55.

Barjaková M., Garnero A., d'Hombres B. (2023): Risk factors forloneliness: A literature review. Soc Sci Med.;334:116163. doi:10.1016/j.socscimed.2023.116163. Epub 2023 Aug 9. PMID:37625251; PMCID: PMC10523154.

Bekaroğlu, E., Yılmaz, T.,(2020): Nomophobia. Differential diagnosis and treatment. Psikiyatride Guncel Yaklasimlar. 2020;12(1):131–42.

Buctot D.B., Kim N., Kim S.H. (2021): Personal Profiles, Family Environment, Patterns of Smartphone Use, Nomophobia, and Smartphone Addiction across Low, Average, and High Perceived Academic Performance Levels among High School Students in the Philippines. Int J Environ Res Public Health.;18(10):5219. doi: 10.3390/ijerph18105219. PMID: 34068928; PMCID: PMC8156849.

Brydges C.R. (2019): Effect Size Guidelines, Sample Size Calculations, and Statistical Power in Gerontology. Innovationin Aging, Volume 3, Issue 4, August 2019, igz036, https://doi.org/10.1093/geroni/igz036

Çatıker A., Büyüksoy G., and Özdil K. (2022): Correlation between Nomophobia, Fear of Missing Out and Academic Success. Bağımlılık Dergisi 23(3):283-291. DOI: 10.51982/bagimli.1015083

Chen S., Li H., and Wen D. (2023): Social Support and Daytime Sleepiness Among Chinese Medical

Students: Mediating Roles of Loneliness and Problematic Smartphone Use. Psychol Res Behav Manag.;16:4083-4093. doi: 10.2147/PRBM.S432400. PMID: 37817912; PMCID: PMC10561758.

Cheng S.M., Taylor D.L., Fitzgerald A.A., Kuo C.C., and Graves K.D. (2022): Build & Belong: A Peer-Based Intervention to Reduce Medical Student Social Isolation. Teach Learn Med.;34(5):504-513. doi: 10.1080/10401334.2021.1984921. Epub 2021 Nov 11. PMID: 34763586; PMCID: PMC9091060.

Christopher McGregory et al. (2015): Academic performance questionnaire, available at: https://www.academia.edu/5734 7883/_PDF_Academic_ Performance_Questionnaire

Copaja-Corzo C., Aragón-Ayala C.J., and Taype-Rondan A. (2022): Nomotest-Group. Nomophobia and Its Associated Factors in Peruvian Medical Students. Int J Environ Res Public Health.;19(9):5006. doi: 10.3390/ijerph19095006. PMID: 35564400; PMCID: PMC9101167.

Devi U., and Dutta R. (2022): A review paper on prevalence of nomophobia among students and its impact on their academic achievement. J Positve Sch Psychol.;6(3):5397–5405–5397– 5405.

Durak H.Y. (2019): Investigation of nomophobia and smartphone addiction predictors among adolescents in Turkey: demographic variables and academic performance. Soc Sci J.;56(4):492–517. doi:10.1016/j.soscij.2018.09.003

Essel, H.B., Vlachopoulos, D., Tachie-Menson, A.(2021): The relationship between the nomophobic levels of higher education students in Ghana and academic achievement. PLoS ONE. 2021;16(6):e0252880. doi: 10.1371/journal.pone.0252880. PMID: 34133434; PMCID: PMC8208529.

Farooq M., Rizvi M.A., Wajid W.A., Ashraf M., Farooq M., Javed H., Sadiq M.A., Jafar H.M., Hameed F., Rizvi M.A., and Tayyba A. (2022): Prevalence of Nomophobia and an Analysis of Its Contributing Factors in the Undergraduate Students of Pakistan. Cyberpsychol Behav Soc Netw.;25(2):147-153. doi:10.1089/cyber.2021.0148. Epub 2022 Jan 12. PMID: 35021897.

Gentina E., Maille V., and Li Z. (2023): A Cross-National Study of Nomophobia Among Brazilian, Chinese, French, and U.S. Young People: The Role of Materialism. Journal of Cross-Cultural Psychology; 54(5) 547–573. DOI: 10.1177/00220221231176060

Gonçalves S., Dias P., and Correia A.P. (2020): Nomophobia and lifestyle: Smartphone use and its relationships with psychopathologies. Computer in Human Behavior Reportsl 2: e100025. https://doi.org/10. 1016/j.chbr.2020.100025

Gutiérrez-Puertas L., Márquez-Hernández V.V., Gutiérrez-Puertas V., Granados-Gámez G., and Aguilera-Manrique G. (2020): The Effect of Cell Phones on Attention and Learning in Nursing Students. Comput Inform Nurs.;38(8):408-414. doi: 10.1097/CIN.0000000000000626. PMID: 32349025.

Gutiérrez-Puertas L., Márquez-Hernández V.V., São-Romão-Preto L., Granados-Gámez G., Gutiérrez-Puertas V., and Aguilera-Manrique G. (2019): Comparative study of nomophobia among Spanish and Portuguese nursing students. Nurse Educ Pract.;34:79-84. doi: 10.1016/j.nepr.2018.11.010. Epub 2018 Nov 17. PMID: 30472531.

Gurbuz, I.B., Ozkan, G. (2020): What is your level of nomophobia? An investigation of prevalence and level of nomophobia among young people in Turkey. Commun Ment Health J. 2020;56:814–22.

Hawthorne G. (2006): Measuring Social Isolation in Older Adults: Development and Initial Validation of the Friendship Scale. Social Indicators Research; 77(3): 521-548. https://doi.org/10.1007/s11205-005-7746-y

Humood A., Altooq N., Altamimi A., Almoosawi H., Alzafiri M., and Bragazzi N.L. (2021): The prevalence of nomophobia by population and by research tool: a systematic review, meta-analysis, and meta-regression. Psych;3(2):249-58. https://doi. org/10.3390/psych3020019.

Hussien , R. M. (2022) :The association between nomophobia and loneliness among the general population in the Kingdom of Saudi Arabia, Middle East Current Psychiatry (9) 29:68 https://doi.org/10.1186/s43045-022-00235-8

Jahrami H., Fekih-Romdhane F., Saif Z., Bragazzi N.L., Pandi-Perumal S.R., BaHammam A.S., and Vitiello M.V. (2022): A social media outage was associated with a surge in nomophobia, and the magnitude of change in nomophobia during the outage was associated with baseline insomnia. Clocks Sleep.;4:508–519. doi: 10.3390/clockssleep4040040. - DOI - PMC - PubMed

Janatolmakan M., Karampour A., Rezaeian S., and Khatony A. (2024): "Nomophobia: Prevalence,

associated factors, and impact on academic performance among nursing students". Heliyon.;10(22):e40225. doi: 10.1016/j.heliyon.2024.e40225. PMID: 39748994; PMCID: PMC11693903.

Kumar B., Saxena B., Gupta P., Batra R., Patel J.D., and Ganapathy K. (2023): Effects of social estrangement on young people's maturation: a review of the research. Georgian Med News.;(345):196-202. PMID: 38325323.

Ma L., Xiao L., and Liu J. (2025): Moderation of teacher-student rapport in the link between smartphone addiction and foreign language burnout and its gender difference. Applied Linguistics Review; (0).

Mohapatra U., Nagarajappa R., Satyarup D., and Panda S. (2023): Validity, reliability and prevalence estimates of nomophobia among undergraduate dental students of Bhubaneswar, India. Rocz Panstw Zakl Hig.;74(1):93-102. doi: 10.32394/rpzh.2023.0246. PMID: 37013899.

Morant, N.A. (2023). The Relationship Between Race, Collectivistic/ Individualistic Attitudes, Internet Addiction, and Nomophobia Among College Students (Doctoral dissertation, Walden University).

Manshaee, G., Nasab, N. M., & Nadi, M. A. (2021). The effectiveness of nomophobia therapy on self-esteem and nomophobia symptoms in high school students. Iranian Journal of Psychiatry and Behavioral Sciences, 15(1), e109291.

National Academy of Sciences Engineering and Medicine (2020): Social Isolation and Loneliness in Older Adults: Opportunities for the Health Care System. The National Academies Press.

Nodir o'g'li F.M., To'ychiyevich A.D., and Nodirovna N.L. (2024): Systematic review of the harmful effects of smartphones on human health. Journal of Innovations in Scientific and Educational Research; 7(3): 295-304.

Özbay S.Ç., Özbay Ö., Akçam A., and Kanbay Y. (2023): Evaluation of factors strongly associated with nomophobia using structural equation modelling: A cross-sectional study. Archives of psychiatric nursing; 44: 69-75.

Penning M., Wu Z., and Hou F. (2022): Ageing & Society; Childlessness and Social and Emotional Loneliness in Middle and Later Life; 1–28.https://doi:10.1017/S0144686X22000824

Olufemi, O. T., Adediran, A. A., & Oyediran, W. O. (2018): Factors affecting students' academic performance in colleges of education in Southwest, Nigeria. British Journal of Education, 6(10), 43-56.

Ray M.E., Coon J.M., Al-Jumaili A.A., and Fullerton M. (2019): Quantitative and Qualitative Factors Associated with Social Isolation Among Graduate and Professional Health Science Students. Am J Pharm Educ.;83(7):6983. doi: 10.5688/ajpe6983. PMID: 31619819; PMCID: PMC6788151.

Roszko-Wójtowicz E., Przybysz K., and Stanimir A. (2025): Unequal Ageing: The Quality of Life of Senior Citizens in the EU Before and After COVID-19. A Multidimensional Approach. Frontiers in Public Health; 13: 1506006.

Safaria, T., Probowati Rahayu, Y., & Rahaju, S. (2024):"Oh my phone, I can't live without you": a phenomenological study of nomophobia among college students. Qualitative Research Journal.

Savitsky, B., Findling, Y., Ereli, A., & Hendel, T. (2020): Anxiety and coping strategies among nursing students during the covid-19 pandemic. Nurse Education in Practice, 46, 102809.

Shah R., Lakhani S., Shah J., Mbithi A., Singh A., Gandhi Z., Mehta P., Kashyap R., and Surani S. (2024): Nomophobia: a challenge among healthcare professionals in Africa. Hosp Pract; (1995). 24:1-9. doi: 10.1080/21548331.2024.2432858. Epub ahead of print. PMID: 39582129.

Shahi R., Acharya S., and Nai S. (2025): Readiness towards Self Directed Learning among Bachelor Level Nursing Students in a Campus, Banke District. Academia Research Journal; 4(1): 114-126.

Shen X., and Wang J.L. (2019): Loneliness and excessive smartphone use among Chinese college students: Moderated mediation effect of perceived stressed and motivation. Comput. Hum. Behav.; 95: 31–36.

Sapci O, Elhai JD, Amialchuk A, Montag C.(2021) : The relationship between smartphone use and students academic performance. Learn Individ Differ.;89: 102035. https:// doi. org/ 10. 1016/j. lindif. 2021. 102035.

Stark, A.L., Geukes, C., Dockweiler, C. (2022) :Digital health promotion and prevention in settings: scoping review. J Med Internet Res. 2022;24(1):e21063.

Su P., and He M. (2024): The mediating role of loneliness in the relationship between smartphone addiction and subjective well-being. Scientific reports; 14(1): 4460.

Takieddin S.Z., Alghamdi F.S., Fida H.L., Alghamdi M.K., Kamfar R.A., Alsaidlani R.H., and Khojah I.M. (2022): Effects of social networking services on academic performance and self-esteem: A cross-sectional study among medical students. J Family Med Prim Care.;11(10):6221-6226. doi: 10.4103/jfmpc.jfmpc_528_22. Epub 2022 Oct 31. PMID: 36618167; PMCID: PMC9810851.

Tárrega-Piquer I., Valero-Chillerón M.J., González-Chordá V.M., Llagostera-Reverter I., Cervera-Gasch Á., Andreu-Pejo L., Pérez-Cantó V., Ortíz-Mallasén V., Blasco-Palau G., and Mena-Tudela D. (2023): Nomophobia and Its Relationship with Social Anxiety and Procrastination in Nursing Students: An Observational Study. Nurs Rep.;13(4):1695-1705. doi: 10.3390/nursrep13040140. PMID: 38133116; PMCID: PMC10745487.

Tuco K.G., Castro-Diaz S.D., Soriano-Moreno D.R., and Benites-Zapata V.A. (2023): Prevalence of Nomophobia in University Students: A Systematic Review and Meta-Analysis. Healthc Inform Res.;29(1):40-53. doi: 10.4258/hir.2023.29.1.40. Epub 2023 Jan 31. PMID: 36792100; PMCID: PMC9932304. https://doi.org/10.4258/hir. 2023.29.1.40

Uddin, M. A. (2017): Socio-economic factors affecting academic performance of university students: A case study of district Gujrat, Pakistan. International Journal of Academic Research in Business and Social Sciences, 7(4), 1-12.

Vagka E., Gnardellis C., Lagiou A., and Notara V. (2024): Smartphone Use and Social Media Involvement in Young Adults: Association with Nomophobia, Depression Anxiety Stress Scales (DASS) and Self-Esteem. Int J Environ Res Public Health.;21(7):920. doi: 10.3390/ijerph21070920. PMID: 39063496; PMCID: PMC11277010.

Valent,i G.D., Bottaro, R., Faraci ,P.(2022) : Effects of difficulty in handling emotions and social interactions on nomophobia: examining the mediating role of feelings of loneliness. Int J Mental Health Addict. 2022:1–15.

Von Stumm S., Hell B., and Premuzic T. (2021): The hungry mind: Intellectual curiosity is the third pillar of academic performance. Perspect. Psychol. Sci.; 6: 574–588.

Wang Z., Wang S., and Song Y. (2025): Predictors of Academic Performance Trajectories Across Early and Middle Adolescence: Links with Internalizing and Externalizing Problems. Journal of Youth and Adolescence; 1-18.

Xie Y., and Luo S. (2024): The associations among type D personality and nomophobia, metacognitions about smartphone use, smartphone addiction in Chinese university freshmen: a two-wave study. BMC Psychiatry.;24(1):620. doi: 10.1186/s12888-024-06073-8. PMID: 39289640; PMCID: PMC11409663.

Yildirim C., and Correia P. (2015): Exploring the dimensions of nomophobia: development and validation of a self-reported questionnaire, Comput. Hum. Behav.; 49 (2015): 130-137.