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Social media use and academic performance among nursing students in Morocco: A cross-sectional study

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ABSTRACT

Purpose: This study investigates the relationship between excessive social media use and academic performance among Moroccan nursing students. It seeks to identify the factors associated with academic achievement in relation to daily social media engagement, while accounting for personal and contextual variables.

Methods: A quantitative, cross-sectional design was conducted. A total of 524 nursing students were recruited through probabilistic cluster sampling. Academic performance was assessed using a self-administered questionnaire. Daily social media use was measured via smartphone screen-time tracking. Additional covariates included study hours, absenteeism, remedial sessions, overall smartphone use, academic engagement, self-efficacy, and educational use of social media. Spearman's rank correlation, simple linear regression, and multiple regression analyses were conducted. Model assumptions were verified before analysis.

Results: A weak but statistically significant negative correlation was observed between social media use and academic performance ($r = -.12$, $p = .027$). Positive predictors of academic performance included proactive study planning, academic engagement, and perceived self-efficacy, whereas absenteeism, remedial sessions, distractive use of social media, and total smartphone time were negative predictors. Sleep duration, parental support, and educational social media use were not significant. The simple regression model explains 1.1% of variance ($p = .020$), while the multiple regression model explains 26.6% ($p < .001$).

Conclusion: Excessive social media use slightly reduces academic performance; however, its effect depends on other behavioral and contextual factors. Interventions promoting digital self-regulation and time management skills are recommended. Future longitudinal and mixed-method studies are needed to establish causality and guide educational policies.

Keywords: excessive social media use, digital behavior, academic performance, nursing students, Morocco

INTRODUCTION

During the first two decades of the 21st century, the use of technologies has witnessed a remarkable surge (Alam et al., 2025). The manipulation of technology has become a global trend (Travkina, 2022). The United Nations (UN) recognizes technology as having a dual role: a driver of peace and sustainable development, but also a potential source of risks to privacy and security (UN, 2020). The last decade has witnessed a proliferation of research on the rapid emergence of digital technologies and their dual influence on various aspects of human life. This expansion of literature parallels the perpetual evolution and diversification of the technological tools themselves, whose impact consequently remains a dynamic phenomenon. Research is increasingly focusing on the smartphone, a tool that is now predominantly used and ubiquitous among young adults (18-24 years old) (Pew Research Center, 2025). In France, the ownership rate has reached 87%, with average daily usage exceeding 4.5 hours, often accompanied by a frequent sense of absence or dependency (CGE et al., 2022). However, its role in the academic environment is of particular interest, lying at the intersection of benefits and risks. On one hand, it is perceived as a vector for the rapid dissemination of information and peer collaboration (Bye et al., 2023), as well as a tool for managing tasks (Ifenthaler & Schweinbenz, 2013). On the other hand, studies highlight potential negative effects on addiction and social behaviors (Seo et al., 2016), on sleep quality, anxiety, and depression (Yang et al., 2020), on attention (Mendoza et al., 2018), and on academic performance and satisfaction in learning contexts (Lepp et al., 2015).

The influence of smartphones and their various applications on students in nursing education programs remains a complex and underexplored issue. Mackay et al. (2017) highlights those smartphones are indispensable tools in nursing education, as they allow instant access to a wide variety of educational resources. However, in Morocco, and more specifically within nursing institutes, research addressing this issue is still scarce and largely in exploratory stages. Single research conducted by Bouhali

(2024), through a qualitative study, explored the roles and perceived benefits of smartphone use in nursing education. The scholarly focus on the impact of smartphone use has revealed the duality and divergence of its effects (Amez & Baert, 2020). However, existing studies remain limited in identifying the direct source of these impacts—whether positive or negative. Indeed, smartphones provide access to a wide range of mobile applications, including search engines, entertainment, video games, learning apps, instant messaging, and social media platforms, among others. It is therefore essential to investigate more specifically both the type and the duration of use of each of these applications in order to better identify the potential sources of influence. Most empirical studies treat smartphone use in a broad and generalized manner without giving sufficient attention to specifying the duration of use. The time spent on each platform or application constitutes a crucial variable that must be considered in studies examining influence. Conducting an in-depth study on the association between the duration of social media use via smartphones represents a relevant approach to better understanding the overall effect of social media use.

The empirical observation of intensive and sometimes problematic social media use among students raises questions about its dual-edged influence on academic outcomes. This observation leads to the central research question of this study: How does the duration of social media use influence students' academic performance?

This study contributes to the literature in two major ways. Firstly, it contributes to the advancement of scientific knowledge on the issue of social media use within academic contexts in Morocco. Secondly, it aims to address the existing gaps in the literature, particularly concerning nursing students.

The objective of this study is to demonstrate the existence of a statistical relationship between the duration of social media use and the academic performance of nursing students in Morocco. The study hypothesizes (H1) that heavy social media use is negatively correlated with the academic performance, based on prior research.

METHODS

Study Design

A quantitative, cross-sectional study was conducted to examine the association between daily smartphone screen-time usage and academic performance among nursing students. Standardized procedures were implemented to minimize potential biases in sampling, data collection, and analysis.

Participants and Sampling

Cluster probability sampling was applied, with classes as sampling units. Thirteen clusters were randomly selected using Microsoft Excel, yielding a sample of 524 students. All students in the selected clusters were invited to participate; only those providing informed consent completed the questionnaire, reducing selection bias.

Data Collection

Data were collected through a self-administered, structured questionnaire covering sociodemographic information and variables theoretically linked to academic performance. The questionnaire was pilot-tested for clarity and reliability. Standardized instructions were provided to minimize information bias.

Variables

Academic performance, the dependent variable, was measured using students' self-reported most recent grade average, with participants instructed to consult official records or device reports. The main independent variable was daily smartphone usage, obtained from screen-time tracking data provided by the pre-installed Digital well-being application. Additional covariates included study habits, academic engagement, and other personal and contextual factors.

Bias Control

Potential confounders were identified a priori and included in multivariate regression models. Selection bias was minimized through random cluster sampling, and information bias was addressed via pretesting and standardized instructions.

Statistical Analysis

Analyses were performed using IBM SPSS Statistics version 26. Descriptive statistics summarized all variables. Spearman's rank correlation assessed bivariate associations, and simple and multiple linear regressions examined relationships between smartphone usage and academic performance while adjusting for confounders. Statistical significance was set at $p < .05$.

Ethics Statement

The study was approved by the Higher Institute of Nursing Professions and Health Techniques in Laayoune on April 25, 2025. Written informed consent was obtained from all participants prior to data collection.

RESULTS

Participant Characteristics, Academic Outcomes/20, and Social Media Use

The final sample included 524 students, predominantly female (58.0%) and the majority were enrolled in nursing programs (79.2%), with smaller proportions in health techniques (12.4%), midwifery (5.3%), and medical-social assistance programs (3.1%). Students were distributed across semesters as follows: (40.3%) in semester 2, (44.3%) in semester 4, and (15.5%) in semester 6. (**Table 1**). Overall mean (M) academic performance was 13.31 (standard deviation [SD] = 1.85). Female students scored slightly higher (13.48) than males (13.02). By discipline, medical-social assistant students had the highest M (14.08), while midwifery students had the lowest (12.74). Performance generally increased with semester progression, with semester 6 students achieving the highest M (14.44), indicating a positive association between academic seniority and performance (**Table 2**).

Table 1. Summary of student distribution by category

Category		Frequency	Percentage (%)
Gender	Male	125	23.9
	Female	304	58.0
	Not reported	95	18.1
Program	Nursing	415	79.2
	Midwifery	28	5.3
	Health techniques	65	12.4
	Medical-social assistant	16	3.1
Semester	Semester 2	211	40.3
	Semester 4	232	44.3
	Semester 6	81	15.5

Table 2. Summary of mean academic performance by category (M/20)

Category		M	SD
Gender	Overall	13.31	1.85
	Male	13.02	1.92
	Female	13.48	1.82
Program	Nursing	13.35	1.93
	Midwifery	12.74	1.76
	Health techniques	13.17	1.41
	Medical-social assistant	14.08	1.44
Semester	Semester 2	13.02	2.02
	Semester 4	13.15	1.59
	Semester 6	14.44	1.72

Regarding daily smartphone and social media use, students reported M = 6.11 hours/day on smartphones (SD = 2.74) and 4.57 hours/day on social media (SD = 2.73). Usage varied by discipline: nursing students showed the highest engagement among major academic tracks (smartphone: 6.25 h/day; social media: 4.67 h/day), while medical-social assistant students reported the greatest overall use (smartphone: 7.92 h/day; social media: 6.5 h/day). Midwifery and health techniques students had the lowest engagement. Usage peaked in semester 4 (**Table 3**).

Table 3. Mean daily smartphone usage by category (hours/day)

Category		M (smartphone)	SD (smartphone)	M (social media)	SD (social media)
Gender	Overall	6.11	2.74	4.57	2.73
	Male	6.16	2.77	4.49	2.70
	Female	6.08	2.78	4.58	2.78
Program	Nursing	6.25	2.74	4.67	2.78
	Midwifery	4.64	2.72	3.88	2.55
	Health techniques	5.48	2.60	3.84	2.36
	Medical-social assistant	7.92	3.06	6.50	3.00
Semester	Semester 2	5.69	2.85	4.23	2.71
	Semester 4	6.47	2.75	4.93	2.76
	Semester 6	6.08	2.55	4.43	2.76

Moreover, WhatsApp (88.4%) and Instagram (87.2%) were the most frequently used platforms, followed by YouTube (59.0%) and Facebook (50.4%). TikTok (48.3%) and Snapchat (36.3%) were moderately used, whereas professional platforms such as LinkedIn (2.3%) were rarely accessed. Many students engaged with multiple platforms simultaneously, reflecting diverse usage patterns (**Table 4**).

Table 4. Frequencies of social media platform usage

Platform	Frequency	Percentage (%)	Percentage (%)*
WhatsApp	463	21.2	88.4
Instagram	457	20.9	87.2
YouTube	309	14.2	59.0
Facebook	264	12.1	50.4
TikTok	253	11.6	48.3
Snapchat	190	8.7	36.3
Telegram	77	3.5	14.7
Pinterest	74	3.4	14.1
Discord	43	2.0	8.2
Twitter	41	1.9	7.8
LinkedIn	12	0.5	2.3
Total	2183	100	416.6

Association Between Social Media Use and Academic Performance

Preliminary analyses indicated a nuanced relationship between social media engagement and academic performance. Moderate daily social media use, particularly among students in advanced semesters, was weakly associated with slightly higher academic scores. In contrast, excessive use particularly observed among medical-social assistant students did not consistently correlate with superior performance. Correlation analyses indicated weak but significant negative associations between daily smartphone (rho = -.096, p = .032) and social media use (rho = -.100, p = .027) and academic performance. A simple linear regression quantifying this link showed that each additional hour of daily social media use was associated with a minimal decrease in performance (β = -.071). However, it is crucial to note that social media use alone explained a very small fraction of the variance in academic performance (R^2 = .011, p = .020), underscoring its limited standalone effect (**Table 5**).

Table 5. Summary of the simple linear regression model

Statistics					
R					0.105
R^2					0.011 (1.1%)
Adjusted R^2					0.009
Standard error of the estimate					1.842
R^2 change					0.011
F change (df1 = 1, df2 = 490)					5.429
Significance of F change					0.020
Durbin-Watson					1.597
Analysis of variance					
Source	**Sum of ²**	**df**	**M²**	**F**	**Significance**
Regression	18.416	1	18.416	5.429	0.020
Residual	1,662.120	490	3.392		
Total	1,680.537	491			
Coefficients					
					Significance
Constant (intercept) B				13.645	0.000
Daily hours of social media use (A)				-0.071	0.000

This perspective is strongly reinforced by a multiple regression model including study habits, absenteeism, engagement, self-efficacy, and device use, which explained a substantially larger portion of the variance in academic performance (R^2 = .266, F [12, 438] = 13.252, p < .001) (**Table 6**). Taken together, these findings confirm that academic performance is predominantly determined by a constellation of interacting personal and contextual factors, with digital device use playing only a marginal role within this broader ecosystem.

Table 6. Summary of the mutiple linear regression model

Statistics					
R					0.516
R^2					0.266 (26.6%)
Adjusted R^2					0.246
Standard error of the estimate					1.623
R^2 change					0.266
F change (df1 = 1, df2 = 438)					13.252
Significance of F change					0.000
Durbin-Watson					1.675
Analysis of variance					
Source	**Sum of ²**	**df**	**M²**	**F**	**Significance**
Regression	419.092	12	34.924	13.252	0.000
Residual	1,154.327	438	2.636		
Total	1,573.419	450			

DISCUSSION

The findings of this study provide support for the initial hypothesis of the research. With a 95% confidence level, the heavy use of social media within this population has a negative influence on the academic performance. The results reveal a statistically significant negative correlation between the time spent on social media and academic performance (rho [492] = -.100, p = .027). Although this relationship is weak, it supports the idea of an inverse link between heavy social media usage and academic success. To begin with, the daily time spent on social media by male students (4.49 hours/day ± SD: 2.70) does not differ significantly from female students (4.58 hours/day ± SD: 2.78). This similarity indicates no significant difference between genders in terms of social media usage duration, nor between levels of education. This suggests that gender does not appear to be a determining factor or educational level, while belonging to a specific program significantly influences the duration of usage. A possible explanation for this result is that both genders in this population have similar interests and needs to satisfy on social media, given the narrow age range of participants (20.80 years ± SD: 1.48) for males and (20.14 years ± SD: 1.72) for females, in addition to their participation in a shared learning environment and common social context. However, the time spent on social media by students in the Assistant Médico-Social program is considerably higher and differs significantly. This can be explained by the specific activities and educational commitments related to this field of study, which consequently extend the duration of social media use. While Alshalawi (2022) review reported that 64% of studies examining learning performance found a positive influence of social media networks, our findings align with the minority trend reporting negative effects.

These findings can partly be explained by the way social media is used within the regional context of southern Morocco. It appears that, for the majority of students, these platforms are predominantly used for non-academic purposes rather than as resources to serve their educational or academic goals. This trend can also be attributed to the lack of guidance and digital awareness in training programs, preventing students from fully leveraging digital tools for educational purposes. Additionally, the limit of alternative recreational activities in the educational environment, whether extracurricular activities or initiatives aimed at constructively engaging students, leads them to turn to social media as their sole source of entertainment. This further reinforces the interpretation of the previous results, where only 30.8% of participants report a very high use of social media for educational purposes, but this usage appears to have no impact on academic performance (rho = -.010; p = .828). In contrast, 52.9% of respondents report a moderate to very high use of social media for distraction, and this usage is negatively correlated with academic performance (rho [505] = -.114; p = .010). This finding suggests that, despite some engagement in educational activities on these platforms, the actual impact on academic success remains limited. On the other hand, using social media for entertainment seems to have a more significant effect, potentially contributing to a decline in academic performance. This result aligns with the findings of Lau (2017), who distinguished between academic and non-academic uses: academic use, which does not constitute a significant predictor of academic performance, and non-academic use, such as video games and multitasking, which have a significant negative impact on academic performance. These results strengthen the idea that, although social media can be used in an educational context, it is primarily their recreational and distracting use that negatively influences academic success. The impact of time spent on social media was examined through simple linear regression, with the coefficient of determination (R^2) not exceeding 1.1%. Subsequently, a set of covariates was incorporated into the multiple regression model, after confirming adherence to the required statistical conditions, in an attempt to better explain the variance in performance in the presence of other variables. These variables can be classified into two main categories: those that contribute to improving academic performance and those that have a negative impact. Among the positively contributing predictors are personal self-efficacy (rho = .232; p < .001), proactive study planning (rho = .219; p < .001), active pedagogical engagement (rho = .283; p < .001), time spent on revision (rho = .108; p = .016), and perceived access to resources (rho = .088; p = .050). These factors show a significant positive correlation with academic success, highlighting their role in improving students' performance. These results suggest that students who possess strong self-regulation skills, effective organizational abilities, and work within a favorable educational environment are associated with higher academic performance. This observation is consistent with several prior studies that highlight the importance of individual and contextual determinants in academic success. Indeed, Previous studies have consistently demonstrated that self-efficacy is a key predictor of performance. Students who believe in their ability to succeed are more likely to adopt effective learning strategies and demonstrate greater perseverance (Degand et al., 2021). Similarly, time planning and management are essential skills: they allow students to structure their efforts, anticipate deadlines, and better manage their cognitive load, resulting in better outcomes (Pirot & De Ketele, 2002). Pedagogical engagement, which refers to the active involvement of students in learning activities, has also been identified as a determining factor for success, facilitating comprehension and knowledge integration. Finally, perceived access to educational resources and the time dedicated to revision enhance opportunities for autonomous learning processes, which are recognized as crucial elements for fostering academic performance. In contrast, certain variables emerge as risk factors that contribute to the reduction of academic performance levels. Among these, multitasking behaviors related to social media, particularly at home (using social media while engaging in learning activities at home) (rho = -.134; p = .003) and in class (using social media while engaging in learning activities in class) (rho = -.126; p = .006), are significantly associated with a decline in academic performance. These findings align with the work of Loh and Kanai (2016), who demonstrated that digital multitasking harms working memory and concentration, both essential skills for academic success. Similarly, May and Elder (2018) highlighted that the simultaneous use of multiple media during study time reduces information retention and cognitive efficiency. Furthermore, excessive smartphone use (rho = -.096; p = .032), which may include the use of social media, also emerged as a vulnerability factor for academic performance. This is consistent with the results of a meta-analysis conducted by Sohn et al. (2019), which confirms that problematic smartphone use is negatively correlated with academic performance, due to its impact on depression, sleep, and anxiety. These findings reinforce the idea that intensive use of technology, particularly smartphones and social media, not only disrupts concentration during study but also affects learning quality, and consequently, academic performance. The multiple regression model, incorporating these variables correlated with

academic performance, explains a much larger portion of the variance (R^2 = 26.6%, p < .001) and (adjusted R^2 = 24.6%). However, despite the inclusion of 12 explanatory variables in the model, approximately three-quarters of the variability remains unexplained within the context of this research. This highlights the complexity of the phenomenon under study and justifies the need for a more in-depth multivariate approach to better understand the determinants of academic success. It is important to note that the study revealed the non-significance of several factors that were initially assumed to have an impact on academic performance. In addition to the pedagogical use of social media (rho = -.010; p = .828) and social media addiction (rho = -.046; p = .303), variables such as perceived parental support (rho = .047; p = .292), the number of hours of sleep per day (rho = -.017; p = .696), and the level of motivation (rho = .061; p = .177) did not show statistically significant links with academic performance. This result contradicts the findings of won Kim (2019), who consider perceived parental support as a significant predictor of academic performance. A possible explanation for this difference lies in the fact that university students develop more autonomy than adolescents in a school setting. As students take more responsibility for their own learning, their perception of parental support may become less influential, being neutralized by increased autonomy and responsibility. Regarding sleep duration, the findings of this study align with those of Lemma et al. (2013), who also found no significant association between sleep duration and academic performance. However, sleep quality was identified as a factor positively influencing academic performance. This distinction highlights the importance of sleep quality on cognitive ability and learning efficiency, rather than its sheer quantity.

This study has certain limitations that must be considered when interpreting the results. First, the cross-sectional design prevents any causal inference between social media use and academic performance. The observed associations are correlational and do not indicate causality. Second, Although the sample was constructed in a representative manner using a probabilistic method (cluster sampling) that ensures equiprobability of being randomly selected, this methodological choice may introduce some heterogeneity within the sample of participants. Additionally, some variables were not measured using psychometrically established scales published in scientific databases, but rather with self-developed scales following the Churchill paradigm, which ensures reliability and validity of the measures within the specific context of this study. However, it should be noted that the absence of standardization in the use of established psychometric scales may limit the comparability of the results with other studies. Finally, it is important to note the existence of a temporal misalignment between the declaration of social media usage duration and the collection of data on academic performance. This time lag could introduce bias, potentially attenuating the strength of the relationships identified between these two dimensions. Indeed, social media usage habits may vary over time, and academic performance may be influenced by unmeasured confounders at the time of data collection.

Future research should consider expanding the scope of investigation to include a more diverse and nationally representative sample of Moroccan university students, in order to better represent the entire academic student population. It would also be valuable to conduct a detailed exploration of the nature of distractive social media usage, which would clarify mechanisms and pathways and specific impacts on academic performance. These studies could provide precise and contextualized data, which could assist policymakers in developing strategies to prevent and mitigate the negative effects of social media use among students. Furthermore, implementing longitudinal studies to observe the evolution of social media usage behaviors and their effects on academic performance over several semesters or years would help to better understand the temporal and causal dynamics. Combining quantitative approaches (questionnaires, statistical analyses) and qualitative methods (interviews, observations) would allow for a richer, more nuanced understanding of social media usage and its academic consequences.

CONCLUSION

The primary objective of this study was to examine the impact of intensive social media use on the academic performance of nursing's, while also integrating other factors that may explain academic outcomes. Through a quantitative approach and a rigorous methodology combining correlational and prediction analyses, reliable and validated psychometric scales, as well as simple and multiple linear regressions. The findings confirm the initial hypothesis: a negative, albeit modest, relationship exists between daily time spent on social media and academic performance (higher use is associated with lower performance). However, the study also revealed that social media use is neither a unique nor an isolated factor. Indeed, its impact on academic achievement appears to depend more on the nature of the use (pedagogical vs. distractive), awareness of potential negative effects, and especially its interaction with other individual variables (self-efficacy, planning, engagement) and contextual ones (resources, educational environment). These results highlight the need to adopt a multifactorial approach to fully understand the determinants of academic success. Looking ahead, it would be relevant to extend this research to larger, nationally representative samples, to conduct longitudinal studies to better capture temporal dynamics, and to deepen the analysis of distractive uses of social media. Furthermore, the findings identified in this study calls for increased vigilance and justifies the implementation of a national prevention strategy. Such a strategy should combine awareness campaigns, educational interventions, and support systems for students. In sum, this research not only sheds light on the dynamics of social media use in academic settings but also provides a useful empirical basis for guiding future educational and health policies related to the digital behaviors of young people in Morocco.

Author contributions: YT: conceptualization, data curation, formal analysis, and writing–original draft; **AN & MJ:** methodology, supervision, and writing–review & editing; & **JL & AW:** data curation and formal analysis. All authors agreed with the results and conclusions.

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AI statement: The authors stated that AI tools assisted with literature review and language refinement, always under strict human supervision.

Declaration of interest: No conflict of interest is declared by the authors.

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