RESEARCH PAPER

Artificial Intelligence and Social Media on Academic Performance and Mental Well-Being: A Descriptive Cross-Sectional Study on Student Perceptions and Impact in Smart Learning

[1*] Prof. Takhellambam Kiranmala Chanu, [2] Dr. Dineshwori Chanu Paonam, [3] Prof. Yaiphakonbi Dharmesh Contractor, [4] Seethi Suseela, [5] Waikhom Ranjana Devi, [6] Gurumayum Priyadarshini, [7] Phurailatpam Jeny Sharma, [8] Dr. Jyoti Katwal

[1*]HOD (Obstetric & Gynaecological Nursing Dept), Parul Institute of Nursing, Parul University, Vadodara, Gujarat. Email: kiranchani1@gmail.com

[2]Professor, SGRRU College of Nursing, Patelnagar, Dehradun.

[3]Professor, Parul Institute of Nursing, Parul University, Vadodara, Gujarat.

[4]Associate Professor, College of Nursing Sciences, Dayananda Sagar University, Bangalore.

[5]Professor cum Vice Principal, Yengkhom Netramani College of Nursing, Kakching, Manipur.

[6]Principal, Leirik Institute of Nursing, Manipur.

[7]Assistant Professor, The Assam Royal Global University, Assam.

[8]Associate Professor, AIIMS, Bilaspur, Himachal Pradesh.

Corresponding Author: Prof. Takhellambam Kiranmala Chanu

Abstract

In the era of digital transformation, artificial intelligence (AI) and social media are increasingly being integrated into educational systems, resulting in the emergence of smart learning environments. These technologies have the potential to enhance academic performance and support mental well-being by personalizing learning experiences, promoting collaboration, and offering academic and emotional support. The aim of the study was to assess the use of artificial intelligence based learning and social media in academic learning, examine students' perceptions of their influence on academic performance through smart learning, and explore their impact on students' mental well-being. The present study employed a quantitative, descriptive cross-sectional research design. A total of 100 nursing students were randomly selected from a selected nursing college. Data were collected using a structured questionnaire comprising four sections with a 5-point Likert scale and were analysed using descriptive statistics. Prior informed consent was obtained from all participants before the commencement of the study, and their voluntary participation was ensured. The findings revealed that 56% of the students reported very high use of AI in academic learning, followed by 38% with high use and 6% with moderate use. Regarding social media use for academic purposes, 6% reported moderate use, 60% high use, and 34% very high use. Perceptions toward the use of AI and social media indicated that 4% of students had a moderate positive perception, 51% a high positive perception, and 45% a very high positive perception of their impact on academic performance. With respect to mental well-being, 53% of students experienced a moderate or mixed impact, while 47% reported a high and predominantly positive impact from the use of AI and social media. The study concludes that artificial intelligence and social media are extensively used by nursing students and are perceived to positively influence academic performance through enhanced learning support and collaboration. Although most students reported a favourable impact on mental well-being, a notable proportion experienced mixed effects, indicating the need for balanced use. Further research with larger samples is recommended to understand long-term academic and psychological outcomes.

Key words: Artificial Intelligence, Social Media, Academic Performance, Mental Well-being, Perceptions, Impact.

How to cite this article: Chanu TK, Paonam DC, Contractor YD, Suseela S, Devi WR, Priyadarshini G, Sharma PJ, Katwal J. Artificial Intelligence and Social Media on Academic Performance and Mental Well-Being: A Descriptive Cross-Sectional Study on Student Perceptions and Impact in Smart Learning. Int J Drug Deliv Technol. 2026;16(10s): 855-859; DOI: 10.25258/ijddt.16.10s.100

Background of the Study

In the era of rapid digital transformation, Artificial Intelligence (AI) and social media technologies have become integral components of contemporary educational systems, leading to the development of smart learning environments. These technologies are

reshaping teaching–learning processes by enabling personalized instruction, adaptive learning pathways, real-time feedback, and enhanced collaboration among learners. The integration of AI-driven tools with social media platforms has further expanded opportunities for knowledge sharing, peer interaction, and academic support beyond traditional classroom boundaries.

AI applications such as intelligent tutoring systems, learning analytics, and automated academic support tools contribute to improved academic performance, while social media platforms facilitate collaborative learning and informal knowledge exchange. However, the educational impact of social media varies depending on its purpose, with academic-oriented usage showing positive outcomes and non-academic use often associated with distraction and reduced academic performance.

Empirical evidence supports these trends. A 2025 study conducted in Pakistan among 400 students reported a positive correlation between the use of AI-based learning tools and higher academic achievement, whereas excessive non-academic social media use was linked to poorer academic outcomes.

Need for the Study

Despite the rapid expansion of AI-driven educational technologies and widespread social media usage among students, there remains a limited understanding of their combined impact on academic performance and mental well-being, particularly within smart learning environments

The mainstream adoption of generative AI has intensified concerns related to overreliance on technology, digital distraction, cognitive overload, and ethical issues in education. Similarly, social media, when not used for academic purposes, may negatively affect concentration, academic productivity, and mental health. Therefore, it is essential to differentiate between constructive academic use and non-academic or excessive use of these technologies.

Understanding students’ perceptions, usage patterns, and experiences with AI and social media is crucial for educators, administrators, and policymakers to design evidence-based strategies that maximize educational benefits while minimizing potential risks. This study is needed to generate empirical data on how AI and social media integration within smart learning environments influences academic outcomes and mental well-being, thereby guiding the development of effective, student-centred, and mentally supportive educational practices.

Objectives:

- To assess the Uses of Artificial Learning and social media in Academic Learning
- To assess student perceptions of how AI and social towards academic performance using smart learning.
- To assess the impact of AI and social media use towards students’ mental well-being.

Methodology:

This study employed a quantitative, descriptive cross-sectional research design to examine the selected variables among nursing students at a single point in time. The cross-sectional approach was deemed appropriate for obtaining a snapshot of participants’ responses without manipulation of variables. The study population comprised nursing students enrolled at a selected nursing college, from whom a sample of 100 students was drawn using a simple random sampling technique to enhance representativeness and reduce selection bias. Data were collected using a structured questionnaire comprising four sections with a 5-point Likert scale 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Prior to data collection, ethical clearance was obtained from the Institutional Ethics Committee of the concerned institution. Participants were informed about the purpose of the study, the procedures involved, and their rights as research participants. Written informed consent was obtained from all respondents before participation. Confidentiality and anonymity were strictly maintained, and participation was entirely voluntary, with participants free to withdraw from the study at any time without penalty. Data were coded, entered, and analysed using Descriptive and Inferential statistics.

Results:

The findings of the study demonstrate a substantial level of engagement with artificial intelligence (AI) and social media among nursing students for academic purposes. With respect to AI usage in academic learning, more than half of the participants (56%) reported a very high level of use, while 38% indicated high usage. Only a small proportion of students (6%) reported moderate use, and none reported low levels of AI utilization. These findings reflect the growing integration of AI-based tools in students’ learning processes.

In terms of social media use for academic purposes, the majority of participants also demonstrated high engagement. A total of 60% of students reported high usage, followed by 34% who indicated very high usage, whereas 6% reported moderate use. This suggests that social media platforms are widely adopted as supplementary academic resources for

communication, information sharing, and collaborative learning.

Regarding students' perceptions of AI and social media in relation to academic performance, the results revealed predominantly positive attitudes. Nearly half of the respondents (45%) expressed a very high positive perception, while 51% demonstrated a high positive perception of the impact of these technologies on their academic performance. Only 4% of students reported a moderate positive perception, indicating strong overall acceptance and perceived academic benefit of AI and social media tools.

With respect to mental well-being, the findings indicated a mixed but largely positive impact. Slightly more than half of the students (53%) reported a moderate or mixed impact on their mental well-being associated with the use of AI and social media, reflecting both supportive and potentially challenging effects. In contrast, 47% of participants reported a high and predominantly positive impact, suggesting that for a substantial proportion of students, these technologies contribute positively to stress management, emotional support, and overall well-being. Overall, the results highlight extensive utilization of AI and social media for academic purposes among nursing students, accompanied by largely positive perceptions of their influence on academic performance and a cautiously positive impact on mental well-being.

Table – 1: Test of Association between Use of Artificial Intelligence (AI) in Learning and Impact of AI and Social Media in Mental Well-being.

N=100

		Use of Artificial Intelligence (AI) in Learning			Total	Fisher's Exact Test	p - value
		Moderate	High	Maximum Score			
Impact of AI and social media in Mental Well-being	Moderate Mixed / neutral impact	3	32	18	53	0.98	0.68(NS)
	High Predominantly positive impact	3	24	20	47		
Total		6	56	38	100		

There was no significance association between Use of Artificial Intelligence (AI) in Learning and Impact of AI and social media in Mental Well-being with p – value 0.68 > 0.05(significance level).

Table – 2: Association between Use of Social Media in Academic Learning and Impact of AI and Social Media in Mental Well-being.

N=100

		Use of social media in Academic Learning			Total	Fisher's Exact Test	p - value
		Moderate	High	Maximum Score			
Impact of AI and social media in M	Moderate Mixed / neutral impact	2	32	19	53	1.047	0.58(NS)
	High Predominantly positive	4	28	15	47		

ental Well-being	impact						
Total		6	60	34	100		

There was no significance association between Use of social media in Academic Learning and Impact of AI and social media in Mental Well-being with p – value 0.58 > 0.05(significance level).

Diagram: 1

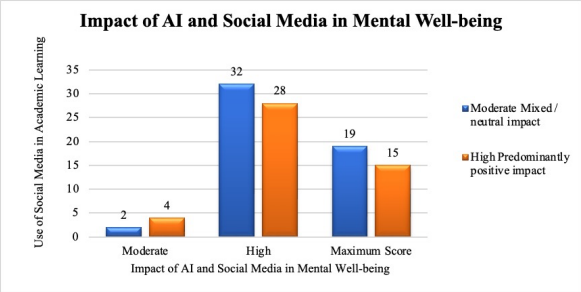

Table – 3: Association between AI Usage & Impact on Mental Well-being

The reported impact on mental well-being was more distributed. While 47% of students noted a "High and Predominantly Positive" impact, a majority (53%) experienced "Moderate or Mixed" effects. To determine if the frequency of AI and social media usage influenced well-being outcomes, Fisher's Exact Test was performed. The results are summarized in the tables below:

Impact on Mental Well-being	Moderate Use	High Use	Max Score Use	Total	p-value
Moderate/Mixed Impact	3	32	18	53	**0.68 (NS)**
High Positive Impact	3	24	20	47	
Total	**6**	**56**	**38**	**100**	
(Note: NS = Not Significant at p > 0.05).					

The statistical analysis indicates that there is no significant association between the frequency of use (AI or social media) and the reported mental well-being impact. This suggests that other factors such as the quality or type of digital engagement may play a more critical role in student well-being than usage frequency alone.

Table 4: Association between social media usage and mental well being

Impact on Mental Well-being	Moderate Use	High Use	Max Score Use	Total	p-value
Moderate/Mixed Impact	2	32	19	53	**0.58 (NS)**
High Positive Impact	4	28	15	47	
Total	**6**	**60**	**34**	**100**	
(Note: NS = Not Significant at (p > 0.05).					

Discussion

The findings of this study underscore the pervasive role of Artificial Intelligence (AI) and social media in the contemporary nursing education landscape. With over 90% of students reporting high to very high usage of AI and social media for academic purposes, it is clear that these tools have transitioned from optional supplements to core components of the "Smart Learning" environment

These results are consistent with a 2025 study in Pakistan, which found a positive correlation between AI tools and academic achievement. Similarly, the findings echo the research by Yadav et al. (2025) regarding the multimodal effects of ChatGPT and social media on student mental health during high-pressure periods like exams. The common thread across these studies, including the current one, is the necessity of integrating these tools in a way that maximizes cognitive offloading while minimizing ethical and psychological risks.

Conclusion:

The study concludes that while AI and social media are perceived as highly beneficial for academic performance in nursing education, their impact on mental well-being remains complex and non-linear. The lack of a direct statistical link between usage frequency and well-being suggests that the quality of digital integration is the more significant variable. Educational institutions should therefore prioritize the development of student-centred policies that foster ethical and mentally supportive tech usage.

Ethical permission: Permission taken from Respective Ethics Committee for Human Research PU-IECHR.

References

1. Ahmad, R. W., Gul, N., & Khurshid, A. (2025). Impacts of social media and artificial intelligence on academic performance of students in Pakistan. Journal of Media Horizons, 6(3), 548–564.

2. Artificial intelligence and social media on academic performance and mental well-being: Student perceptions of positive impact in the age of smart learning. (2024). Heliyon, 10(8), e29523. https://doi.org/10.1016/j.heliyon.2024.e29523

3. Khan, K., Mehmood, S., & Irshadullah, H. M. (2025). Effects of artificial intelligence on the academic achievement of undergraduate students. Dialogue Social Science Review (DSSR), 3(5), 632–640.

4. Samo, N. A., Shah, S. S., & Ramsha. (2025). The effect of AI-based learning tools on academic performance of secondary school students: A quantitative study from Shaheed Benazirabad. Journal of Political Stability Archive, 3(2), 899–915. https://doi.org/10.63468/jpsa.3.2.51

5. Cahyani, N., & Asfian, M. R. A. (2025). The influence of AI and social media on academic and mental health: Perspective Makassar State University students in the smart learning era. Journal of Smart Education and Emerging Technology, 1(1), 37–45.

6. Ashraf, M. A., Alam, J., & Kalim, U. (2025). Effects of ChatGPT on students' academic performance in Pakistan higher education classrooms. Scientific Reports, 15, Article 16434. https://doi.org/10.1038/s41598-025-92625-1

7. Delello, J. A., Sung, W., Mokhtari, K., Hebert, J., Bronson, A., & De Giuseppe, T. (2025). AI in the classroom: Insights from educators on usage, challenges, and mental health. Education Sciences, 15(2), 113. https://doi.org/10.3390/educsci15020113

8. Iqbal, J., Hashmi, Z. F., Asghar, M. Z., et al. (2025). Generative AI tool use enhances academic achievement in sustainable education through shared metacognition and cognitive offloading among preservice teachers. Scientific Reports, 15, 16610. https://doi.org/10.1038/s41598-025-01676-x

9. Yadav, S. A., Gupta, M., & Acharya, S. (2025). Multimodal analysis of ChatGPT and social media effects on student mental health during exams using statistical and AI techniques. Journal of Marketing & Social Research, 2(4), 336–339.

10. Suhaoping, A. P., & Patricia, E. (2025). Artificial intelligence and social media on academic performance and mental well-being: Students' perceptions in the era of smart learning. Journal of Smart Education and Emerging Technology, 1(1), 19–29.

11. Tess, P. A. (2013). The role of social media in higher education classes (real and virtual). Computers in Human Behavior, 29(5), A60–A68. https://doi.org/10.1016/j.chb.2012.12.032.

12. Greenhow, C., & Lewin, C. (2016). Social media and education: Reconceptualizing the boundaries of formal and informal learning. Learning, Media and Technology, 41(1), 6–30. https://doi.org/10.1080/17439884.2015.1064954.

13. Chan, K. S., Zary, N., & others. (2019). Applications and challenges of implementing artificial intelligence in medical education: Integrative review. JMIR Medical Education, 5(1), e13930.