

01. Title: Borrowed Confidence: AI-Assisted Learning Dependency and Psychological Distress Among Medical Students in Georgia and India: A Cross-Sectional StudyAarushraj Chugh¹¹ David Tvildiani Medical University, Georgia

Background: Medical students worldwide increasingly rely on AI tools such as ChatGPT, Gemini and Claude for daily study and heavier use has been linked to higher anxiety and depression. Most studies frame AI as either helpful or harmful and overlook students who recognise that AI is weakening their reasoning and confidence yet still depend on it. This gap is clinically important because these students will soon make independent decisions for patients.

Aim: To examine the association between AI-assisted learning dependency and psychological distress in Georgian and Indian medical students and to identify students who recognise AI-related cognitive harm yet continue depending on it.

Methods: An anonymous web-based cross-sectional survey of medical students aged ≥ 18 years in Georgia and India was conducted via institutional and student networks using purposive snowball sampling. The 63-question instrument first captured demographic details including country, age, gender, training stage and workload. AI-use behaviour was then assessed through eight questions on frequency, daily duration, preferred tool, purpose and late-night use, plus a 10-question AI-Assisted Learning Dependency Scale developed for this study to capture behavioural and emotional reliance. Thirteen further questions probed students' perceptions of AI's effect on academic confidence, attention, independent clinical reasoning and verification of medical content with six more on sleep and screen-related symptoms. Psychological distress was grounded using the validated Depression Anxiety and Stress Scale (DASS-21), interpreted with established severity bands. Analyses comprised descriptive statistics, Pearson correlations between dependency and each distress subscale, and tertile-stratified comparison. Participation was voluntary with electronic informed consent and no personal identifiers collected.

Results: A total of 104 medical students from Georgia and India participated; AI use was near-universal (98.1%). The AI-Assisted Learning Dependency Scale showed good internal reliability (Cronbach $\alpha = 0.837$). Psychological distress was strikingly high: more than seven in ten met criteria for moderate or worse anxiety, and more than half for depression. Higher dependency was significantly correlated with each distress subscale ($r = 0.27$ – 0.32 , all $p \leq 0.005$), with a graded pattern: the most dependent students showed 50% higher mean depression and 56% higher mean anxiety than the least dependent. The most telling finding was the co-existence of perceived benefit and harm: while most students felt AI improved their understanding and confidence, half acknowledged it weakened their independent clinical reasoning and reduced their problem-solving effort, and only 41.3% verified AI-generated medical content. Almost one in three (30.8%) endorsed both benefit and harm, and this self-aware group carried the heaviest distress burden.

Conclusion: In Georgian and Indian medical students, AI-assisted learning dependency was significantly and progressively associated with greater psychological distress. A substantial group recognised that AI was weakening their own reasoning and confidence yet continued to depend on it, and carried the heaviest distress burden. With fewer than half routinely verifying AI-generated medical information, these findings raise a clear concern: future physicians whose confidence is borrowed from AI may struggle to make safe independent decisions in clinical practice. Embedding structured AI-literacy training and protected independent-reasoning practice into early medical education should be considered a priority.

Key Words: Artificial Intelligence; Metacognition; Mental Health; Cross-Sectional Studies

Figure or Table:

Table. AI-related responses and DASS-21 distress outcomes in medical students from Georgia and India (N = 104).

Variable	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree	Agree+ (%)
Perceived AI benefit (% , n)						
AI improves my understanding	2.9 (3)	3.8 (4)	22.1 (23)	33.7 (35)	37.5 (39)	71.2
AI makes me more confident while studying	1.9 (2)	5.8 (6)	29.8 (31)	34.6 (36)	27.9 (29)	62.5
AI helps me identify gaps in understanding	1.9 (2)	6.7 (7)	30.8 (32)	38.5 (40)	22.1 (23)	60.6
Perceived cognitive harm (% , n)						
AI may weaken my independent clinical reasoning	6.7 (7)	7.7 (8)	32.7 (34)	37.5 (39)	15.4 (16)	52.9
AI reduces my independent problem-solving effort	2.9 (3)	10.6 (11)	36.5 (38)	34.6 (36)	15.4 (16)	50.0
AI reduces my attention span	7.7 (8)	25.0 (26)	34.6 (36)	23.1 (24)	9.6 (10)	32.7
I accept AI explanations without checking	8.7 (9)	21.2 (22)	34.6 (36)	29.8 (31)	5.8 (6)	35.6
Verification practice (% , n)						
I regularly verify AI medical content	5.8 (6)	14.4 (15)	38.5 (40)	27.9 (29)	13.5 (14)	41.3
I critically evaluate AI answers	3.8 (4)	12.5 (13)	37.5 (39)	32.7 (34)	13.5 (14)	46.2
Dependency feelings (% , n)						
Less confident without AI	10.6 (11)	19.2 (20)	37.5 (39)	24.0 (25)	8.7 (9)	32.7
Anxious without AI access	25.0 (26)	18.3 (19)	34.6 (36)	17.3 (18)	4.8 (5)	22.1
Difficult to complete tasks without AI	7.7 (8)	17.3 (18)	42.3 (44)	22.1 (23)	10.6 (11)	32.7
Statistical summary						
Dependency × distress, Pearson r	Depression 0.27 (95% CI 0.08–0.44), p = 0.005; Anxiety 0.32 (0.14–0.48), p < 0.001; Stress 0.30 (0.11–0.46), p = 0.002					
Dose-response, DASS-Anxiety mean	Low ≤27 (n = 37): 13.1; Mid 28–32 (n = 34): 16.5; High >32 (n = 33): 20.4					
Benefit-harm paradox group	n = 32 (30.8%); mean DASS-Total 57.9 vs 46.1 in benefit-only group					

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