



AI Tools for Supporting Students with ADHD in Higher Education in Gulf Cooperation Council (GCC) States: A Systematic Literature Review

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ABSTRACT

Although a considerable number of states in the Gulf Cooperation Council (GCC) and nationally stipulated AI strategies have a high prevalence of ADHD, there is no peer-reviewed data on AI-aided ADHD interventions in higher education in the GCC. This systematic review will answer three research questions namely: transferability of evidence to GCC settings; ethical, cultural, linguistic and privacy concerns to GCC deployment; priorities of a specific research agenda to the GCC (RQ3). This review, which is embedded in a 63-source corpus obtained based on systematic bilingual search ($k = 0.84$) was conducted in accordance with PRISMA 2020 with JBI critical appraisal. The transferability assessment matrix of GCC was designed on the technological, linguistic, cultural, and structural planes. The analysis of the ethical results was systematic using a concern-to-investigation gap analysis, and thematic synthesis was based on the Thomas and Harden (2008) structure. The lack of peer-reviewed studies in any GCC state was zero, which validates evidence vacuum of a systematic character. Transferability testing demonstrated high technological portability; low linguistic transferability, as the 63 tools were all English-only and Arabic NLP capacity remains a domain of underdevelopment; moderate cultural transferability, which involves the ability to port interventions based on core executive functions, but where family processes and stigma need to be culturally adjusted; and low structural transferability since GCC disability models were immature. Applicable ethical dimensions, five of which are identified as GCC-specific implications, and a proposal of an eight-priority research agenda was identified. The GCC evidence vacuum captures convergent influences of the stigma of ADHD, suppression of disclosure, the Western epistemic hegemony, and the infrastructure gap in the disability area. Reducing this gap necessitates Arabic AI co-design, disclosure-free support models, epidemiological baseline studies, as well as culturally modified implementation frameworks.

Keywords: ADHD · Higher Education · AI Tools · GCC · Systematic Review

INTRODUCTION

The GCC Context: A Paradox of Need and Neglect

The Gulf Cooperation Council, which consists of Saudi Arabia, United Arab Emirates (UAE), Qatar, Kuwait, Bahrain, and Oman is a paradox in its academic meaning. Ambitious national AI plans of all six member states have been developed: both UAE National AI Strategy 2031 and Saudi Arabia Vision 2030 explicitly include AI into education reform agenda (Albous et al., 2025; Alotaibi, and Alshehri, 2023). An analytical study of AI use in higher education in Oman was used as a mixed-method approach that reported institutional migration pressure due to the national requirements regardless of the existing faculty preparation voids (Benayoun et al., 2026). GCC is aggressively implementing AI in education on an institutional level.

Three structural features make such a lack of research on ADHD-AI especially decisive. First, the prevalence of ADHD is high: a meta-analysis of Arab Gulf countries has estimated a combined prevalence of 5.90% (Almojarthe, 2023); a systematic review (N = 455,334) in Saudi Arabia has found 12.4% (Aljadani et al., 2023); a national cross-sectional study in the UAE has reported 33.7% of first conditional year of university-students to meet screening criteria of probable ADHD (Al-Yateem Second, diagnosis and disclosure are also suppressed systematically by cultural stigma (Dias et al., 2025; Akel et al., 2024). Third, there is no virtual Arabic-language ADHD support infrastructural support.

Research Questions

This systematic review follows three research questions:

1. Does GCC-specific evidence underpin the use of AI tools in assisting students with ADHD in higher education settings and to what extent can the global evidence base be transferred to GCC higher education settings?
2. Which ethical, cultural, lingual and privacy factors apply to the use of AI tools among ADHD students in GCC institutions of higher education?
3. What evidence gaps suggest future research, primary research priorities?

Rationale for Systematic Review Methodology

The article falls under the category of systematic review since it focused on answering specific answerable questions that necessitated a significant reproducible evidence discovery and synthesis organized through quality appraisal, which are the hallmarks of the systematic review approach (Munn et al., 2018). Well in advance of the mapping role of the companion scoping review, this review incorporates a formal quality appraisal, has a structured framework of analysis (the GCC transferability matrix) and creates overt recommendations. The two articles are methodologically complementary partners of each other: the scoping review scales the breadth; this systematic review is the depth and GCC relevance.

Significance of the Study

The combination of artificial intelligence and neurodevelopmental disability advocacy in higher education has some follow-on implications to inclusive academic practice. Assistive technologies based on AI have been found to bring quantifiable benefits to the individualization, accessibility, and interaction of students with disabilities in universities (Dumitru et al., 2025; El Morr et al., 2024). All these advantages are particularly relevant throughout the GCC, where university-age groups are significantly underdiagnosed with ADHD, and levels of stigma and the lack of mental healthcare facilities exacerbate the problem (Al-Yateem et al., 2024). The emerging practice in UAE shows that AI tools can have valuable potential in facilitating a variety of learning processes in the GCC educational context (El Nagggar et al., 2024), and region-specific telehealth models have been proven to be feasible in the context of the ADHD intervention (Albanna et al., 2023). Since GCC nations are pursuing ambitious national plans of deploying AI with educational transformation as its core, cognizant of how AI may be competently and ethically applied to students with ADHD is a scholarly and policy priority of strategic relevance.

Research Gap

In spite of the fast development of AI-disability topics worldwide, there is no evidence that specifically covers AI tools with regards to ADHD students in the GCC higher-education. The systematic reviews verify that culturally and linguistically disadvantaged groups continue to be a critically low-represented cluster in AI-disability journals (El Morr et al., 2024; Dumitru et al., 2025). The structural nature of this lack is further aggravated by a reported Arabic NLP gap: currently available AI teaching resources are largely English language and the morphological complexity of the Arabic language and dialect diversity pose significant challenges that the current large language models have failed to address (Alayba, 2025). GCC disability support models are infantile, and the stigma surrounding ADHD is actively discouraging the process of diagnosis and disclosure in the Arab region (Al-Yateem et al., 2024; Albanna et al., 2023). All these converging barriers, linguistic, structural

and socio-cultural are necessary so that western based evidence could not be provided directly into GCC contexts and so a requirement of primary research, Arabic AI co-design and culturally modified implementation frameworks are demanded.

LITERATURE REVIEW

ADHD in GCC Higher Education: Epidemiological Context

Epidemiological information about ADHD in GCC countries is piecemeal yet always suggests high levels of untapped need. The meta-analysis by Almojarthe (2023) in 16 studies in Arab Gulf countries found a pooled prevalence of 5.90. In a Saudi survey (N = 455,334) by Aljadani et al. (2023), the amount was 12.4% (almost twice the amount that the world is quoted). Al-Yateem et al. (2024) report the strictest GCC higher education data: In their UAE national cross-sectional research, 33.7% of first-year students were most likely eligible to fit screening criteria of probable ADHD, with the majority of them being female and undiagnosed before. The GCC has witnessed a fast rate of university growth that has made huge and young bodies of students whose neurodevelopmental needs are increasing without adequate specialist infrastructure to cater to them.

Stigma, Disclosure and the Hidden Population.

The main structural obstacle to ADHD recognition and treatment in GCC institutions of higher education is cultural stigma. Tatlow-Golden et al. (2024) validated the existence of high levels of nondisclosure patterns in young adults in severe stigma settings. In the qualitative study conducted in the UAE by Dias et al. (2025), the researcher ascertained that mental health stigma is conditioned by cultural, religious and social factors that interact in a complex way, which abolishes clinical disclosure. The empirical implication is that the Western model of AI integration, based on formal ADHD diagnosis as a point of entry to institutional help, is fundamentally unsuitable to be applied to GCC contexts. A certain design requirement is determined by the disclosure paradox: the efficient AI support should be not disclosed by formal diagnosis or institutional disclosure.

AI Strategies in GCC and the Deployment Opportunity.

The states of the GCC have implemented some of the most active national strategies in AI in the world. The adaptation pattern of the GCC workforce to AI was recorded by Albous et al. (2025). The study by Alotaibi, & Alshehri (2023) discussed the adoption of AI in higher education in Saudi under Vision 2030. Benayoun et al. (2026) reported an issue of deployment pressure overpowering pedagogical preparation in establishment in Oman. There is an active search of AI implementation schemes among GCC universities, which opens a structural gap: the lack of AI implementation of ADHD can be plugged before the default patterns of implementation are institutionalized without paying attention to disability equity.

Neurodivergent AI Ethical Governance.

The international evidence base recognizes five main ethical aspects, namely, data privacy, algorithmic favoritism, cultural sensitivity, disclosure and consent, and diagnostic thoroughness (Garcia-Lopez and Trujillo-Linan, 2025; Zhu et al., 2025; Qayyum et al., 2025). They all have increased importance in GCC contexts: the requirements of data sovereignty differ between GDPR; none of the studied tools have so far been tested to work on Arab neurodivergent populations; the culture frame on Western contexts of neurodiversity has been predominant; and institutional consent protection models in Western neurodiversity institutions do not yet exist in GCC contexts.

METHODOLOGY

Review Design

This systematic review is fused into the same corpus of 63 sources that were found during the systematic search of the scoping review. PRISMA 2020 guidelines format reporting. The quality can be measured by JBI critical

appraisal tools (Peters et al., 2020). Analysis is done through thematic synthesis (Thomas and Harden, 2008). The -RQ3 are answered in terms of special sub-analyses of the corpus, which is reinforced by special additional searching of GCC-specific contextual and policy sources.

Transferability Assessment Framework GCC.

This review was developed around a structured four-domain GCC Transferability Assessment Matrix. The four domains Technological, Linguistic, Cultural, and Structural- were obtained due to the systematic extraction of the corpus and synthesis with the literature on higher education in the GCC countries. Ratings were: High (evidence is directly applicable), Moderate (evidence has to be used with contextual adaptation), and Low (evidence is not applicable without basic restructuring). The ratings were based on consensus between two reviewers after independent rating. This is a novel approach in terms of methodology of this review.

Ethical Analysis Framework

Ethical considerations were extracted from all 63 sources using a structured template capturing: (i) ethical concern identified; (ii) mode of identification (raised as concern vs. empirically investigated); (iii) population applicability; and (iv) GCC-specific implication. A concern-to-investigation gap analysis was conducted for each dimension, calculating the proportion of sources raising each concern relative to those empirically investigating it.

Research Priority Development (RQ3)

The eight-priority research agenda was developed through three stages: (1) systematic identification of evidence gaps from transferability assessment and ethical analysis (2) ranking using four criteria -- magnitude of gap, clinical and educational significance, GCC feasibility, and contribution to the global evidence base; and (3) operationalisation with study design guidance. All recommendations are directly traceable to documented evidence gaps.

RESULTS

GCC-Specific Evidence: The Confirmed Vacuum

Primary Finding: Zero Eligible GCC Studies

The most significant finding of this systematic review is the complete and confirmed absence of peer-reviewed studies examining AI tools for ADHD support in any GCC higher education institution. The bilingual Arabic-English search retrieved 148 records from Arabic-language sources and GCC grey literature, none described, evaluated, or theorised AI tools for ADHD students in any Arab higher education context. Consistent with the methodological guidance of Peters et al. (2020) and the PRISMA-ScR reporting standards of Tricco et al. (2018), the absence was rigorously documented across all stages of the selection process. The gap is empirically genuine, not bibliographically artefactual.

The significance of this finding is established by three convergent evidence bodies. First, epidemiological data confirm substantial undiagnosed ADHD prevalence across GCC states: a national cross-sectional study of first-year UAE university students reported that 33.7% met probable ADHD screening criteria, the majority female and previously undiagnosed (Al-Yateem et al., 2024); a systematic review and meta-analysis of 14 Saudi studies (N = 455,334) reported a pooled prevalence of 12.4% (Aljadani et al., 2023); and a region-wide meta-analysis of 16 Arab Gulf country studies estimated a pooled rate of 5.90% (Almojarthe, 2023). Second, national AI policy frameworks have positioned AI as central to educational transformation across all six GCC states, with the GCC workforce actively adapting to AI-driven change (Nasiri et al., 2025; Al-Zahrani et al., 2023). Third, cultural stigma dynamics simultaneously suppress ADHD disclosure and amplify the potential value of non-disclosure-dependent AI support (Dias et al., 2025; Akel et al., 2024). The coexistence of documented epidemiological need, rapid institutional AI adoption, and zero empirical investigation constitutes a research gap of first-order significance.

Structural Explanation: The Hidden Population

The vast majority of GCC university students with ADHD are undiagnosed, undisclosed, and invisible to institutional disability services. Where there is no registered population, there is no institutional rationale for targeted support research, and where there is no institutional research infrastructure, there is no output. The epidemiological data of Al-Yateem et al. (2024), Aljadani et al. (2023), and Almojarthe (2023) confirm that ADHD prevalence is substantial across all GCC states, yet the translation of that prevalence into institutional visibility, through formal diagnosis, disclosure, and registration, has not occurred. The ecological systems framework applied to neurodivergent higher education students by Butcher and Lane (2025) helps explain why: macrosystem-level forces including cultural stigma, religious normalisation of adversity, and family-level management of mental health conditions structurally prevent the institutional visibility that would create a research base. Where students are invisible, research is absent.

Cultural Explanation: Stigma as Research Suppressor

Cultural stigma is a primary structural barrier to both ADHD identification and research participation in GCC contexts. Visser et al. (2025) documented that ADHD stigma operates across individual, interpersonal, community, and structural levels simultaneously, with young adults in high-stigma environments demonstrating consistent patterns of nondisclosure and reduced help-seeking. The companion paper by Visser et al. (2024) confirmed through narrative review that perceived stigma is among the most powerful moderators of ADHD-related help-seeking behaviour, with consequences extending to research recruitment and participation. Dias et al. (2025), in a UAE-based qualitative study of health science students, confirmed that mental health stigma in the UAE is shaped by intertwined cultural, religious, and social influences that fundamentally suppress clinical disclosure and institutional engagement. Research on sensitive populations requires participant willingness to engage, including disclosure for recruitment purposes; in high-stigma contexts, this creates a structural recruitment impediment. This stigma-driven research suppression mirrors the pattern documented for mental health research more broadly across Arab societies by Elyamani et al. (2021), whose systematic review of mental health literacy across GCC states confirmed that cultural and religious barriers systematically limit engagement with mental health research and services.

Epistemic Explanation: Western Knowledge Production Dominance

The concentration of the global AI-ADHD evidence base in North American and UK institutions reflects structural inequalities in academic publishing infrastructure, grant funding, and research capacity that systematically disadvantage Arab-world institutions. McDowall and Kiseleva (2024), in a rapid review of supports for neurodivergent students in higher education, concluded that the evidence base is overwhelmingly US-centric and that this geographic skew is not incidental but reflects publishing infrastructure inequalities. Gray et al. (2025), in a scoping review of neurodivergent student experiences in health professions education, confirmed near-total absence of studies from Arab or Gulf contexts, consistent with the present finding. The deliberate inclusion of a bilingual Arabic-English search strategy, retrieving 148 records from Arabic-language sources that English-only searches would have missed entirely, is a direct methodological response to this epistemic gap. The fact that none of those 148 records contained eligible evidence on AI tools for ADHD in higher education confirms that the gap is genuinely empirical rather than a bibliographic artefact of English-language search bias.

GCC Transferability Assessment

Table 1 presents the four-domain GCC Transferability Assessment Matrix. The overall conclusion is that the global AI tool evidence base, mapped in the companion scoping review across 63 sources, is partially transferable to GCC contexts but requires substantial adaptation across linguistic, cultural, and structural dimensions before responsible deployment. The matrix is applied and interpreted following the structured quality appraisal process recommended by Peters et al. (2020) and informed by the thematic synthesis methodology of Thomas and Harden (2008).

Table 1. GCC Transferability Assessment Matrix

Domain	Rating	Key Evidence Base	Principal Barriers / Facilitators
Technological	HIGH	Cloud-based tools globally accessible; UAE/KSA ICT infrastructure world-class (Nasiri et al., 2025; Al-Zahrani et al., 2023)	Advanced GCC internet infrastructure; bandwidth not a barrier; national AI strategies actively facilitate institutional adoption
Linguistic	LOW	All 63 reviewed tools English-only; Arabic NLP performance deficit documented across LLMs	Arabic morphological complexity degrades LLM performance; no validated Arabic-language ADHD AI tools identified in corpus
Cultural	MODERATE	Core EF mechanisms neurobiologically portable; family and stigma dynamics require adaptation (Butcher & Lane, 2025; Dias et al., 2025)	Islamic normative frameworks, family collectivism, and GCC gender norms require co-design with GCC student populations
Structural	LOW	GCC disability frameworks nascent; disclosure culture absent; specialist service capacity minimal (Al-Yateem et al., 2024; Benayoun et al., 2026)	Western AI integration models assume disability registration, accommodation systems, and trained staff absent in most GCC universities

Technological Transferability: High

The infrastructure of ICT in the GCC states features one of the most advanced in the world, and the number of people who own mobile internet has reached above 98 percent in the United Arab Emirates and Saudi Arabia. Any cloud-based LLM systems considered in the evidence base world are technically usable on a GCC environment. The predisposition of GCC labor force towards AI is improving swiftly guided by the national AI approaches with Nasiri et al. (2025) examination on GCC AI workforce adaptation indicating that institutional deployment capability is escalating across the six member states. The GCC institutions recognized in the AI adoption graphs presented by Al-Zahrani et al. (2023) of Saudi higher education and Benayoun et al. (2026) of Omani higher education confirm that the GCC institutions can and must adopt AI tools on a large scale, defined by the national policy. High technological transferability rating is something that stands out as GCC is another Global South environment with bandwidth, connectivity, and institutional infrastructure being the major barriers.

Transferability in Language: Low.

The 63 sources that were found in the systematic search were studied on AI tools calibrated, validated, and only available in English. Arabic is morphologically, syntactically, and orthographically unique to English, and the performance flaws in NLP by all significant LLM platforms are properly documented when Arabic is used. This becomes especially consequential considering that the most common type of tools in the world evidence base, Generative AI and LLMs (34.9% of retrieved sources, according to the companion review) as such are inherently language-dependent. The cognitive scaffolding, task decomposition, and the writing support mechanisms according to which the ADHD executive function deficits are addressed by the LLMs, as reported by Liao et al. (2025) and Carik et al. (2025), are blatantly ruined when the function of Arabic languages is lowered. This result that spontaneous use of ADHD individuals to support executive functions by using an LLM is not only common in studies of students using diaries (Findlater et al., 2025) or community-scale research (Carik et al., 2025), but also makes Arabic NLP performance, rather than a technical issue but an equity issue: GCC students who have ADHD and attempt to utilize such tools receive a systematically lower level of support on their native language.

Cultural Transferability: Moderate

Core executive function mechanisms, task initiation, working memory externalization, time management scaffolding, are neurobiologically grounded and culturally portable. The cognitive mechanisms through which AI tools address these deficits, as characterized by Liao et al. (2025) and reviewed in the companion scoping

review, do not depend on cultural context for their neuropsychological validity. However, three GCC-specific dimensions require non-trivial adaptation before responsible deployment. First, Islamic normative frameworks shape students' comfort with AI-generated content, particularly in emotionally sensitive domains such as self-disclosure and help-seeking, domains directly relevant to ADHD support (Dias et al., 2025). Second, the family collectivism characteristic of GCC societies means that ADHD disclosure and support decisions are frequently family-level rather than individual choices, a dynamic absent from the Western higher education models underpinning all 63 identified sources (Butcher & Lane, 2025). Third, the gender dynamics of GCC universities, where women's access to campus services varies significantly by institution and emirate, require gender-sensitive deployment frameworks not addressed in any identified study. The Moderate rating reflects genuine portability of core EF support mechanisms alongside non-trivial cultural adaptation requirements.

Structural Transferability: Low

Western AI integration models for ADHD support assume a constellation of institutional infrastructure, formal disability registration systems, structured accommodation provision, trained disability service staff, and a normalised culture of disclosure, that is absent in most GCC universities. Benayoun et al. (2026) documented that even general AI adoption in GCC higher education outpaces institutional readiness; disability-specific AI integration lags further. The structural transferability rating of Low does not indicate that AI-ADHD support in GCC contexts is impossible, but rather that fundamentally different implementation models are required, models that do not depend on disclosure-gated disability registration as a prerequisite for accessing support. The most promising structural approach involves disclosure-free, universally accessible AI support, as modelled by the biometric-AI platform of Wilder and Strachan (2025) and the Universal Design for Learning frameworks advocated by Mallary et al. (2025) and demonstrated empirically by Owenz and Hyatt (2024). These approaches provide ADHD-relevant support without requiring students to formally identify as disabled, a design principle of particular structural importance for GCC deployment contexts.

Ethical and Cultural Considerations

Overview of Ethical Findings

Ethical considerations were raised in 48 of the 63 included sources (76.2%) but empirically investigated in only 16 (25.4%). Table 2 presents the five principal ethical dimensions extracted from the corpus, with the proportion of sources raising versus empirically investigating each concern, and GCC-specific implications derived through thematic synthesis (Thomas & Harden, 2008). The systematic ethical analysis follows the framework recommended by Carballo-Herrera et al. (2025), whose systematic review of ethical and regulatory challenges of generative AI in education identified concern-to-investigation gaps as a primary indicator of governance immaturity. The gap is widest for cultural sensitivity of AI output, 34.9% of sources raised this concern but only 9.8% empirically investigated it, which is precisely the dimension most consequential for GCC deployment.

Table 2. Ethical Considerations for AI-ADHD Deployment in GCC Higher Education

Ethical Concern	Sources Raising	Empirically Investigated	GCC-Specific Implication
Data Privacy & Security	65.1%	8 sources (19.5%)	GCC data sovereignty laws diverge from GDPR; institutional AI governance policies absent in most GCC universities (Benayoun et al., 2026; Chen et al., 2025)
Algorithmic Bias	57.1%	6 sources (14.6%)	No AI system validated on Arab neurodivergent populations; double exclusion risk for Arabic-speaking ADHD students (Dumitru et al., 2025; Ofosu-Asare, 2025)
Cultural Sensitivity of AI Output	34.9%, HIGHEST GCC PRIORITY	4 sources (9.8%)	LLMs trained on Western data; Islamic/family cultural frames absent; risk of value-misaligned responses in emotionally sensitive ADHD support domains (Berrezueta-Guzman et al., 2024)

Disclosure & Informed Consent	38.1%	5 sources (12.2%)	AI tools without formal disclosure collect sensitive cognitive and behavioural data; consent frameworks not developed for GCC neurodivergent student contexts (Carballo-Herrera et al., 2025; Zhao et al., 2025)
Diagnostic Integrity / Feigning	14.3%	3 sources (7.3%)	Fuermaier & Niesten (2025): ChatGPT enables successful ADHD feigning on validated assessments; GCC disability services lack safeguards present in Western universities

The Disclosure Paradox

The disclosure paradox is the most structurally consequential ethical dimension for GCC deployment. AI tools operating without formal disclosure requirements collect sensitive behavioural and cognitive data, interaction logs, performance patterns, attention and engagement metrics, requiring robust consent frameworks. Yet the stigma dynamics documented by Visser et al. (2025), Dias et al. (2025), and Akel et al. (2024) mean that formal disclosure to access institutional support is precisely what most GCC students with ADHD will not do. The paradox is structural: tools designed to support without requiring disclosure nonetheless collect disclosure-equivalent data without the consent frameworks that formal disclosure channels would trigger. Carballo-Herrera et al. (2025), in a systematic review of ethical and regulatory challenges of generative AI in education, identified this data-consent gap as a primary governance concern. Zhao et al. (2025), examining generative AI use by students with disabilities in higher education, documented that students use AI tools for disability-related support without institutional awareness, a pattern of invisible use with direct GCC relevance. GCC-specific institutional AI governance frameworks must address this paradox before deployment scales.

Algorithmic Bias and the Arab Neurodivergent Population

No AI system evaluated in the 63-source corpus was trained or validated on Arab neurodivergent populations. Arabic-speaking ADHD students face a dual exclusion: from training data as ADHD individuals and from training data as Arabic speakers. This compounded exclusion creates a systematic underperformance risk when these students use AI tools whose parameters were optimised for neurotypical, English-speaking populations. Dumitru et al. (2025), in an integrative review of AI support for students with disabilities in higher education, explicitly noted that algorithmic bias disproportionately affects students with underrepresented disabilities, a category in which ADHD students in Arabic-speaking contexts are doubly situated. Ofosu-Asare (2025) argued that ethical frameworks for AI in neurodiverse educational settings must explicitly address the training data composition that drives algorithmic performance rather than treating bias as an incidental feature of deployment. For GCC contexts, this means requiring AI tools to document their training data demographics and performance on Arabic-speaking neurodivergent populations before institutional deployment.

Cultural Sensitivity of AI Output

Cultural sensitivity of AI output receives the highest GCC-specific priority rating in Table 2, reflecting both its clinical significance and the near-total absence of empirical investigation in the current evidence base. LLMs trained predominantly on Western English-language data may generate responses that misalign with Islamic values, family-oriented cultural frames, or GCC gender norms. In the emotionally sensitive domains most relevant to ADHD support, emotional regulation, help-seeking behaviour, and interpersonal self-disclosure, culturally misaligned AI responses could actively harm students who have already navigated significant barriers to seeking support. Berrezueta-Guzman et al. (2024), who evaluated the efficacy of ChatGPT in therapeutic ADHD enhancement, confirmed that cultural sensitivity is the AI performance dimension showing the largest gap from clinical requirements, and that management of culturally sensitive topics is precisely where LLMs perform most poorly. Liao et al. (2025), in their systematic review of generative AI for neurodivergent students in higher education, noted that personalization for cultural and linguistic diversity remains the most under-addressed dimension of LLM design for neurodivergent populations. No evaluated tool has undergone cultural sensitivity validation for Arab Muslim educational contexts.

Diagnostic Integrity in Low-Infrastructure Contexts

A controlled analogue study by Furermaier and Niesten (2025) showed that university students who had access to ChatGPT were able to successfully impersonate ADHD on a set of validated clinical neuropsychological measures, resulting in performance profiles that do not differ significantly between them and actual presentations of ADHD. This observation has significant implications to the GCC contexts due to two reasons. To start with, GCC university disability services are still fledgling, understaffed, and functioning devoid of validation, specialist control and assessment infrastructure that are provided in well-endowed Western disability offices. In low-infrastructure conditions which means that there is limited capacity to detect, the probability of AI-assisted manipulation of diagnoses is significantly high. Second, the incentive structure is different: even under the condition of the low levels of official ADHD diagnosis and high social stigma the incentive to feign in the GCC settings may have qualitatively different motives than in Western ones. In a systematic review of ethical risks in AI-assisted education, Chen et al. (2025) pinpointed the issue of assessment integrity as a more recent priority concern as AI tools have continued to become more relevant to helping students achieve more academically consequential performances. Institutional-scale AI-ADHD implementation in GCC contexts should be preceded by governance structures, specialist monitoring, multi-modal assessment procedures and institutional policies of AI-ADHD use, rather than be post-hoc.

The Research Priority Agenda (RQ3).

Table 3 shows the eight priority research agenda as the systematic derivation of the transferability assessment, the ethical analysis and the EF domain coverage analysis in the companion scoping review. Derivation was done based on the evidence-gap-to-recommendation package suggested by Munn et al. (2018), who discerned that research suggestions in systematic reviews should be directly relatable to identified evidence gaps but not as the hypothetical research preferences. The priorities are ordered in a manner that those that have to be in place before any other research can be undertaken as prerequisites come first. The marks in green denote those priorities that can be implemented in the GCC at present in terms of the current methodological and institutional resources.

Table 3. Eight-Priority Research Agenda for AI-ADHD Support in GCC Higher Education

P	Research Priority	Study Design	Evidence Gap Addressed	GCC Feasibility
1	GCC ADHD prevalence and disclosure baseline, epidemiological study	Cross-sectional population survey with validated ADHD screening instruments; n >= 5,000 per GCC state	Absence of GCC epidemiological foundation (Al-Yateem et al., 2024; Aljadani et al., 2023; Almojarthe, 2023)	Feasible with national ministry engagement; no specialist infrastructure required
2	Arabic-language AI tool co-design for ADHD executive function support	Participatory design methodology; iterative prototyping with GCC ADHD students as co-designers	Linguistic transferability gap; cultural adaptation requirement (Liao et al., 2025; Carik et al., 2025)	Requires Arabic NLP industry partnership; 2–3-year development timeline
3	Disclosure-free AI support feasibility RCT in GCC university setting	Randomised controlled trial; n >= 60; validated EF outcome measures; 12-week minimum follow-up	Stigma-driven disclosure barrier; structural transferability gap (Visser et al., 2025; Dias et al., 2025)	Feasible, avoids disclosure-requiring recruitment; most immediately executable RCT design
4	Emotional regulation multimodal AI intervention study	Pre-post experimental design; biometric and affective AI integration; n >= 80	Critical EF domain gap: emotional regulation addressed by only 22.2% of reviewed sources	Feasible in UAE/KSA with specialist hardware; requires clinical psychology collaboration
5	Longitudinal AI tool academic	Prospective cohort design; validated	Short follow-up limitation: 58.5% of reviewed studies	Feasible with GCC institutional research



	outcomes study (minimum 12 months)	academic performance, retention, and wellbeing outcomes	followed up for under four weeks	partnerships; requires longitudinal data infrastructure
6	Arabic NLP performance audit for ADHD-relevant support tasks	Comparative technical audit; systematic evaluation of Arabic vs English LLM performance across EF task types	Linguistic transferability gap; no Arabic-language performance data in current corpus	Feasible using computer science methodology; no participant recruitment required
7	GCC higher education AI policy analysis for neurodiversity inclusion	Document analysis of institutional AI policies + structured stakeholder interviews (n >= 30 policy actors)	Governance gap: ethical frameworks absent in GCC institutional AI deployment (Benayoun et al., 2026; Carballo-Herrera et al., 2025)	Feasible, policy documents publicly accessible; low-cost qualitative methodology
8	Pre-registered systematic review with meta-analysis of AI-ADHD HE interventions	Full systematic review following PRISMA 2020; meta-analysis when homogeneity of outcomes permits	Current evidence base too immature and heterogeneous for synthesis (Munn et al., 2018; Priestley et al., 2026)	Requires 3-5 years of primary research output from Priorities 1-7 before synthesis is viable

The methodological hierarchy structured by Munn et al. (2018) is confined to the sequencing logic of the eight priorities: epidemiological baseline research (Priority 1) is required in order to conduct research recruitment; co-design of the tools (Priority 2) is required in order to conduct intervention evaluation; feasibility trials (Priority 3) are required in order to conduct definitive RCTs (Priority 4 and 5). The policy analysis (Priority 7) and technical audit (Priority 6) can be concurrent with the line of intervention research. Priority 8 a pre-registered systematic review and meta-analysis, is specifically placed as a future research endpoint in line with the observation of Priestley et al. (2026) that the existing evidence bases to support AI-ADHD interventions in higher education lacks enough maturity and homogeneity to justify a quantitative synthesis. Priorities 3, 4 and 5 should be structured based on the conceptual and empirical grounds represented by the structure that Butcher and Lane (2025) and the principle of disclosure-free designs as displayed by Wilder and Stratchan (2025), Mallary et al. (2025) and Owenz and Hyatt (2024).

DISCUSSION

The GCC Evidence Vacuum as a Substantive Scholarship Discovery

Not only the well-established gap of peer-reviewed evidence, this is the absence of data on its own, but a fact about scholarly integrity with several explanatory levels. The system, which periphery, culture, and allocation of resources combine to make a huge number of people invisible to research, is explained by the structural, cultural, and epistemic explanations mentioned in Section 4.1. Scoping review of neurodivergent health professions education establishment established the almost complete lack of Arab or Gulf-based studies (Gray et al., 2025). A systematic review of the interventions applied to neurodivergent students in higher education in seven countries has produced no GCC-based studies (Priestley et al., 2026). This trend can be repeated in various independent searches.

Transferability Without Translatability

In the transferability matrix, technology accessibility (High) is differentiated, and meaningful contextual applicability, which entails language, culture, and structural adaptation. ChatGPT and Claude are already available to GCC students; it does not imply that the tools are effective in addressing ADHD in Arabic, in the frames of Islamic culture, or in the framework of institutions without disability registration. The largest practical implication of the Low linguistic transferability rating is that the most used category of tools (Generative

AI/LLMs, 34.9% also happens to be the category with the highest language gap. The development of Arabic NLP to undertake tasks related to ASDD requires an underlying condition on equal AI-ADHD support in GCC higher education.

Unproven Ethics of Deployment

GCC universities are implementing AI in an institutional scale that has not been specifically addressed with ADHD. The GCC students with ADHD are already using the LLMs unaware of institutional premises, modified tools, or cultural sensitivity validation or consent schemes, which is why the spontaneous appropriation of AI by students with ADHD has been documented (Carik et al., 2025; Findlater et al., 2025). Atcheson et al. (2025) did not find even one interviewed student with a disability who stated that the instructors were discussing AI in an accessibility perspective. Mallery et al. (2025) claimed that the introduction of AI should take a proactive position to prioritize equity. To GCC institutions this requires creating AI policies that definitely encompass neurodivergent needs, developing pathways that do not rely on disclosure and creating data governance systems prior to the deployment of AI-ADHD becoming large scale.

Ecological Systems Theory and the GCC Macrosystem

Ecological systems theory (Butcher & Lane, 2025) explains why GCC-specific research is irreducible. The GCC macrosystem -- characterised by Islamic normative frameworks, family collectivism, national AI strategy imperatives, and specific stigma dynamics -- shapes every nested level of ADHD students' experience. No tool development at the microsystem level can compensate for macrosystem forces preventing ADHD identification and suppressing disclosure. Research must engage the macrosystem as a primary subject: studying the policy landscape (Priority 7), engaging family systems in co-design (Priority 2), and establishing epidemiological baselines (Priority 1).

Towards a GCC-Adapted AI-ADHD Model

The convergent findings point toward a GCC-adapted model with four defining features: (1) disclosure-free access through universal design and privacy-preserving biometric-AI; (2) Arabic-language native capability requiring bespoke Arabic NLP development; (3) culturally grounded design through co-design with GCC ADHD students, families, and cultural-religious advisors; and (4) governance before deployment -- institutional AI policies addressing neurodivergent equity and cultural sensitivity must precede institutional-scale deployment.

CONCLUSION

Principal Findings

This systematic review examined three questions concerning GCC contextual relevance of the global AI-ADHD higher education evidence base. The primary finding -- zero peer-reviewed studies from any GCC state -- is both the principal result and the driving rationale. Transferability: technological barriers surmountable; linguistic and structural barriers substantial; cultural barriers moderate. Five ethical dimensions with critical GCC-specific implications were identified. The eight-priority research agenda provide a sequenced framework for building the GCC evidence base.

Original Contributions

Three original contributions: (1) first GCC-focused systematic analysis of the AI-ADHD higher education evidence base with bilingual Arabic-English search; (2) the GCC Transferability Assessment Matrix -- a four-domain framework applicable to other Global South contexts; and (3) the first systematically derived eight-priority research agenda for AI-ADHD support in GCC higher education.

Limitations

Four limitations apply: (1) absence of GCC primary studies means transferability conclusions rest on inferential comparison; (2) the global evidence base's methodological immaturity constrains transferability confidence; (3)

rapidly evolving GCC policy landscapes may alter structural transferability; and (4) ethical analysis is inferential regarding GCC-specific implications.

Call to Action

The eight priorities in Table 3 constitute a research call to action for GCC research institutions, international collaborators, and national education ministries. Priority 1 epidemiological baseline is the foundational prerequisite. Priority 2 is that the Arabic AI tool co-design is the enabling prerequisite for all subsequent intervention research. Priority 3, disclosure-free RCT is the most immediately executable intervention study. The timeline to Priority 8 (pre-registered systematic review) is estimated at five to eight years of sustained investment. The window for equity-informed AI-ADHD integration in GCC higher education is open. This review defines what must be done to use it well.

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