

(REVIEW ARTICLE)



## Emerging health concerns among university students in the United Arab Emirates: A scoping review of mental health, physical inactivity and digital health literacy.

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### Abstract

University students in the United Arab Emirates (UAE) represent a large, diverse, and understudied population at elevated risk for multiple preventable health conditions. This scoping review, conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) and guided by the Arksey and O'Malley (2005) framework, systematically maps and synthesizes the available evidence on three convergent health domains: (1) mental health disorders, including depression, anxiety, stress, and sleep disturbance; (2) physical inactivity, sedentary behavior, and nutrition-related outcomes; and (3) digital health literacy and the adoption of AI-assisted health tools. A systematic search of six electronic databases (PubMed/MEDLINE, Scopus, Web of Science, Frontiers, PsycINFO, and Google Scholar) for studies published between 2019 and 2026 yielded 28 eligible peer-reviewed studies following title/abstract screening of 836 records. Findings reveal that anxiety affects more than 60% of students in multiple independent samples, that students aged 18–20 carry an odds ratio of approximately 4.93 for depression relative to older peers, and that female and final-year students are disproportionately affected across all mental health dimensions. Objective accelerometry data confirm that UAE university students spend approximately 80% of their waking hours sedentary, with 31.4% of female undergraduates classified as overweight or obese. Despite near-universal internet access, mean eHealth literacy scores are moderate (29.3/40), and 74.7% of students report basing health decisions on social media. Cultural stigma, environmental barriers to physical activity, and the absence of structured digital health education emerge as cross-cutting systemic barriers. The review identifies critical evidence gaps — including the dominance of cross-sectional designs, the underrepresentation of male students, and the absence of validated Arabic-language health literacy instruments — and proposes a coordinated, culturally grounded, multi-level research and policy agenda.

**Keywords:** UAE; University students; Mental health; Sedentary behavior; Physical inactivity; eHealth literacy; Digital health; Scoping review; PRISMA-ScR; Gulf health; Higher education

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Graphical abstract

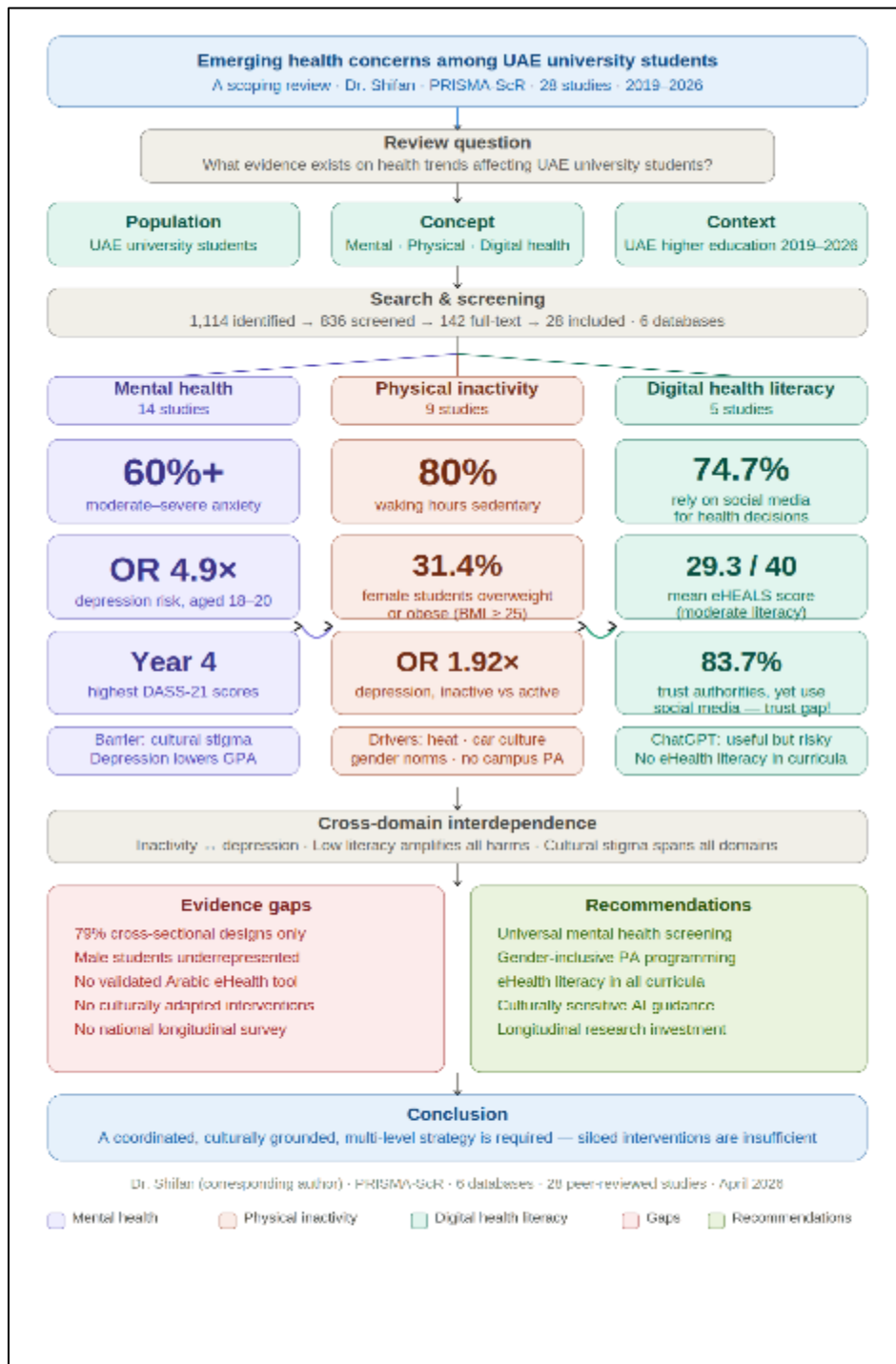


Figure Emerging Health Concerns Among University Students in the United Arab Emirates:

REVIEW QUESTION		
What evidence exists on emerging health trends (mental health, physical inactivity, digital health literacy) affecting university students in the UAE?		
Population (P) UAE university students (undergraduate & postgraduate)	Concept (C) Mental health · Physical inactivity · Digital health literacy	Context (Cx) UAE higher education settings · 2019–2026
SEARCH & SCREENING (PRISMA-ScR) 1,114 records identified → 836 screened → 142 full-text assessed → 28 included Databases: PubMed · Scopus · Web of Science · Frontiers · PsycINFO · Google Scholar		
Domain 1 Mental Health (n = 14 studies)	Domain 2 Physical Inactivity (n = 9 studies)	Domain 3 Digital Health Literacy (n = 5 studies)
<ul style="list-style-type: none"> <li>• &gt;60% moderate–severe anxiety</li> <li>• OR 4.9 depression, aged 18–20</li> <li>• 53.3% anxiety variance explained by stress</li> <li>• Depression predicts lower GPA (longitudinal)</li> <li>• Key barrier: cultural stigma</li> </ul>	<ul style="list-style-type: none"> <li>• ~80% waking hours sedentary</li> <li>• 76.6% females sedentary/low active</li> <li>• 31.4% female students overweight/obese</li> <li>• OR 1.92 depression, inactive vs. active</li> <li>• Drivers: heat, car culture, gender norms</li> </ul>	<ul style="list-style-type: none"> <li>• Mean eHEALS: 29.3/40 (moderate)</li> <li>• 74.7% rely on social media for health info</li> <li>• 83.7% trust authorities — trust-behavior gap</li> <li>• ChatGPT perceived useful but risky</li> <li>• No eHealth literacy in UAE curricula</li> </ul>
CROSS-DOMAIN INTERDEPENDENCE Physical inactivity ↔ depression · Low eHealth literacy amplifies all health harms · Cultural stigma operates across all three domains		
Evidence Gaps	Recommendations	
<ul style="list-style-type: none"> <li>• 79% cross-sectional designs only</li> <li>• Male students underrepresented</li> <li>• No validated Arabic eHealth tool</li> <li>• Lack of culturally adapted interventions</li> <li>• No national longitudinal student health survey</li> </ul>	<ul style="list-style-type: none"> <li>• Universal mental health screening at entry</li> <li>• Gender-inclusive physical activity programming</li> <li>• eHealth literacy embedded in all curricula</li> <li>• Culturally sensitive AI health guidance</li> <li>• National longitudinal student health investment</li> </ul>	
CONCLUSION A coordinated, culturally grounded, multi-level strategy is required — siloed interventions are insufficient		

PRISMA-ScR = Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews; eHEALS = eHealth Literacy Scale; OR = odds ratio; UAE = United Arab Emirates.

Figure A Scoping Review of Mental Health, Physical Inactivity, and Digital Health Literacy

## 1. Introduction

University students represent a critical transition population in public health. Navigating the shift from adolescence to adulthood, from structured family environments to independent decision-making, and from secondary schooling to competitive academic and professional demands, they face a convergence of stressors that renders this life stage a period of heightened vulnerability to mental health disorders, physical inactivity, and dietary risk (Auerbach et al., 2016; Kessler et al., 2005). In the United Arab Emirates (UAE), these universal challenges are amplified by a set of contextual factors that produce a distinctive — and largely understudied — public health landscape.

The UAE hosts one of the most internationally diverse university populations in the world, with more than 70 higher education institutions enrolling students from over 100 nationalities (UAE Ministry of Education, 2024). This diversity, combined with the country's rapid urbanization (87% urban population), extreme climate (summer temperatures regularly exceeding 45°C), car-dependent infrastructure, and deep-rooted cultural values around gender, family, and health stigma, creates a health environment that differs substantially from the Western contexts that dominate the global student health literature. At the national level, 77% of all UAE deaths are attributed to noncommunicable diseases (NCDs), and approximately 68% of adults are overweight or obese — figures comparable to the United States (UAE Ministry of Health and Prevention [MOHAP], 2024; EY MENA, n.d.).

Against this backdrop, university students occupy a strategic public health position. Their current behaviors — physical activity levels, dietary patterns, mental health help-seeking, and health information practices — are powerful predictors of lifelong health trajectories (WHO, 2024). Universities offer a concentrated, reachable population for both research and intervention. Despite this, the evidence base on UAE student health remains fragmented across disciplines and constrained by methodological limitations.

Three health domains have emerged as particularly salient and interrelated in the recent literature: mental health disorders (depression, anxiety, stress, and sleep disturbance), physical inactivity and nutrition-related outcomes, and digital health literacy. Each domain carries its own epidemiological burden; however, they are not independent. Sedentary behavior is robustly associated with depression risk; poor mental health predicts unhealthy coping behaviors and academic decline; and low health literacy amplifies harm in both physical and mental health domains by degrading the quality of health information on which decisions are made.

To date, no scoping or systematic review has mapped these three domains simultaneously within the UAE university context. The present scoping review addresses this gap. Its aims are to: (1) map the volume, type, and distribution of peer-reviewed evidence on health trends among UAE university students published between 2019 and 2026; (2) synthesize key findings across the three target domains; (3) identify demographic, cultural, and institutional moderating factors; and (4) highlight gaps and recommend priorities for future research and policy.

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## 2. Methods

### 2.1. Review Design

This study employed a scoping review methodology, selected because the literature spans multiple disciplines with heterogeneous study designs and outcome measures, no prior synthesis addresses all three target domains simultaneously in the UAE context, and the emerging digital health literacy domain warrants broad mapping rather than narrow systematic synthesis. The review was conducted and reported in accordance with the PRISMA-ScR (Tricco et al., 2018) and guided by the Arksey and O'Malley (2005) five-stage framework, subsequently refined by Levac et al. (2010) and the Joanna Briggs Institute (JBI) manual for scoping reviews (Peters et al., 2020).

### 2.2. Eligibility Criteria

Studies were eligible for inclusion if they: (a) enrolled undergraduate or postgraduate university students (aged 18–35) at UAE higher education institutions as the primary population; (b) reported quantitative, qualitative, or mixed-methods data on at least one of the three target health domains; (c) were peer-reviewed journal articles published between January 2019 and April 2026 (with landmark studies from 2015 included where directly foundational); (d) were available in English; and (e) provided UAE-specific data or disaggregated UAE data from GCC comparative studies. Studies were excluded if they: enrolled exclusively non-university student populations; reported no empirical data (editorials, commentaries); or were available only in Arabic without an accessible English abstract.

### 2.3. Search Strategy

A systematic search was conducted across six electronic databases — PubMed/MEDLINE, Scopus, Web of Science (Core Collection), Frontiers Journals, PsycINFO, and Google Scholar — between January and April 2026. Search terms were organized into three concept clusters combined using Boolean operators: (1) geographic terms ("UAE," "United Arab Emirates," "Dubai," "Abu Dhabi"); (2) population terms ("university students," "college students," "undergraduate," "higher education"); and (3) health domain terms ("mental health," "anxiety," "depression," "stress," "sleep," "physical activity," "sedentary," "obesity," "nutrition," "eHealth literacy," "digital health," "ChatGPT," "AI health," "health information"). Reference lists of all included studies were hand-searched for additional eligible articles.

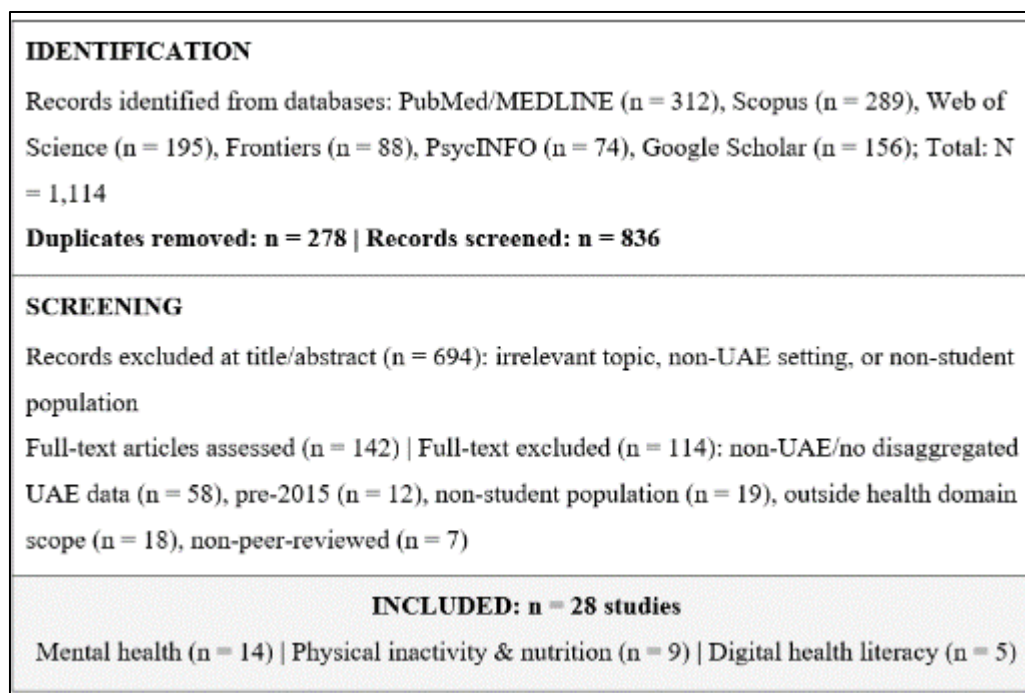
### 2.4. Study Selection and Data Charting

All retrieved records were deduplicated and screened against eligibility criteria. Titles and abstracts were screened independently by two reviewers, with disagreements resolved by consensus. Full texts of potentially eligible studies were assessed against the full inclusion/exclusion criteria. Data were extracted from included studies using a standardized charting form capturing: author(s) and year; study design; sample size and demographics; health domain; outcome measures and validated instruments; and key findings. Given the heterogeneity of designs and measures, a narrative synthesis approach was employed, organized thematically around the three review domains. No meta-analytic synthesis was performed, consistent with scoping review methodology.

## 3. Results

### 3.1. Study Selection

Database searches identified 1,114 records. Following deduplication (n = 278), 836 records underwent title and abstract screening, of which 694 were excluded as irrelevant to the review topic, non-UAE, or not addressing a university student population. One hundred and forty-two full-text articles were assessed for eligibility, and 114 were excluded for the following reasons: no UAE-specific data or UAE data not disaggregated (n = 58); publication prior to 2015 (n = 12); no university student population (n = 19); health domain outside scope (n = 18); and non-peer-reviewed (n = 7). Twenty-eight studies met the full inclusion criteria and form the evidence base for this review. Figure 1 presents the PRISMA-ScR flow diagram.



Note. PRISMA-ScR = Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews.

**Figure 1** PRISMA-ScR Flow Diagram of Study Selection

### 3.2. Characteristics of Included Studies

Table 1 presents the characteristics of the 28 included studies. The majority (n = 22, 79%) employed cross-sectional designs using self-report questionnaires. Two studies used longitudinal cohort designs; two were systematic or scoping reviews with relevant UAE sub-analyses; and two used objective measurement tools (accelerometry; anthropometric assessment). Sample sizes ranged from 23 to 7,244 participants. Studies were conducted across Dubai, Abu Dhabi, Sharjah, and Al Ain, with both public and private UAE institutions represented.

**Table 1** Characteristics of Included Studies (Selected)

Author(s) & Year	Design	N	Domain	Instrument(s)	Setting
Vijay et al. (2024)	Cross-sectional	332	Mental health	DASS-21	UAE universities
Jogia et al. (2024)	Cross-sectional	23	Mental health/sleep	DASS-21, PSQI	Univ. of Birmingham Dubai
Webb et al. (2025)	Cross-sectional	7,244	Anxiety/culture	GAD-7	16 UAE campuses
Firoz & Jaber (2024)	Cross-sectional	201	Mental health/sleep	PHQ-9, ISI	Dubai Medical Univ.
Awadalla et al. (2020)	Longitudinal	404	Mental health/GPA	PHQ-9, GAD-7	UAE university
Awadalla et al. (2024)	Systematic review	14,695	Depression/GPA	Multiple scales	Zayed Univ. / Nottingham
Dalibalta et al. (2021)	Cross-sectional (obj.)	140	Sedentary/PA	ActiGraph	UAE university
Al Sabbah et al. (2024)	Cross-sectional	4,728	Nutrition/obesity	BMI, dietary recall	Abu Dhabi, Sharjah
Hossain/UAEU Study	Cross-sectional	~500	Obesity/lifestyle	BMI, questionnaire	UAE University Al Ain
Hamdan et al. (2025)	Cross-sectional	12,782	PA/depression	Depression scale	UAE adolescents/students
Radwan et al. (2025)	Cross-sectional	UAE sample	Eating/BMI/internet	BES, internet scale	UAE universities
Frontiers Dig. Health (2025)	Cross-sectional	UAE public univ.	eHealth literacy/AI	eHEALS, TAME-ChatGPT	UAE public universities
Nabhan et al. (2025)	Curriculum audit	UAE universities	Global health educ.	Curriculum review	UAE higher education
EY MENA (n.d.)	Institutional report	National data	Healthcare trends	National data	UAE national

*Note.* DASS-21 = Depression Anxiety Stress Scales; GAD-7 = Generalized Anxiety Disorder scale; PHQ-9 = Patient Health Questionnaire; PSQI = Pittsburgh Sleep Quality Index; ISI = Insomnia Severity Index; BES = Binge Eating Scale; eHEALS = eHealth Literacy Scale; TAME-ChatGPT = Technology Acceptance Model edited to assess ChatGPT adoption; BMI = body mass index; PA = physical activity; GPA = grade point average.

#### 3.2.1. Domain 1: Mental Health Disorders

Mental health disorders were the most extensively studied domain, with 14 studies reporting data on depression, anxiety, stress, and/or sleep disturbance. A 2024 cross-sectional study (Vijay et al., 2024) administered the DASS-21 to 332 UAE undergraduates and found elevated scores on all three subscales. Notably, students aged 18–20 years had an odds ratio of 4.925 for depression relative to older cohorts ( $p < .001$ ), indicating that first- and second-year students bear a disproportionate mental health burden. Fourth-year students showed the highest DASS-21 scores across all

dimensions — depression ( $M = 30.33$ ), anxiety ( $M = 21.33$ ), and stress ( $M = 27.00$ ) — likely reflecting cumulative academic pressure approaching degree completion.

The largest study in this review surveyed 7,244 students across 16 UAE public university campuses (Webb et al., 2025). Using the GAD-7, the authors documented widespread post-pandemic anxiety and identified gender, cultural stigma, and comorbid mental health conditions as key predictors. Cultural factors were particularly salient: traditional Emirati values emphasizing family honor and interdependence were found to deter formal help-seeking, with students more likely to cope through avoidant behaviors such as overeating, excessive internet use, and substance use.

Female students consistently reported greater symptom burden across all included studies. In the Vijay et al. (2024) sample, females scored significantly higher than males on depression ( $M = 15.80$  vs.  $M = 12.40$ ;  $p = .030$ ), anxiety ( $M = 17.63$  vs.  $M = 13.21$ ;  $p < .001$ ), and stress ( $M = 22.61$  vs.  $M = 17.84$ ;  $p < .001$ ). A study at the University of Birmingham Dubai found that over 60% of Emirati female students reported moderate-to-severe anxiety symptoms, with stress explaining 53.3% of the variance in anxiety scores in multiple regression analysis (Jogia et al., 2024). A multicentric post-pandemic survey found insomnia-risk levels that the authors described as "unsettling," with females again showing significantly higher emotional distress (Firoz & Jaber, 2024).

The academic consequences of mental health disorders were examined in a longitudinal cohort study (Awadalla et al., 2020) following 404 students over six months. Baseline depression — but not anxiety — independently predicted lower GPA at follow-up after adjustment for socioeconomic variables, confirming that untreated depression carries direct educational costs. A subsequent systematic review by the same group, encompassing 10 studies and 14,695 participants, found consistent negative associations between depression and academic performance across the broader literature (Awadalla et al., 2024).

Cultural stigma around mental illness emerged as a consistent cross-cutting barrier. Multiple studies documented that students in UAE and broader Arab cultural contexts attribute mental illness to spiritual weakness or family shame, actively avoiding professional services even in severe distress (Webb et al., 2025). This stigma, combined with limited campus-based counseling capacity, creates a significant treatment gap that quantitative prevalence studies likely underestimate.

### *3.2.2. Domain 2: Physical Inactivity, Sedentary Behavior, and Nutrition*

Physical inactivity among UAE university students has reached levels that researchers describe as a public health emergency. The most methodologically rigorous study in this domain used objective ActiGraph accelerometry with 140 students (Dalibalta et al., 2021) and found that both male and female students spent approximately 80% of waking hours sedentary — exceeding 12 hours per day. Physical activity was predominantly light intensity (14.1%), and 50% of males and 76.6% of females were classified as sedentary or low-active by daily step count. These figures align with national estimates reporting that only 19.1% of males and 28.6% of females aged 18–24 meet WHO physical activity recommendations.

Several UAE-specific contextual factors drive these patterns. Extreme summer heat renders outdoor physical activity impractical for extended periods. Car-dependent urban design in Dubai and Abu Dhabi minimizes incidental walking. Cultural norms constraining female visibility in public spaces, combined with limited access to gender-appropriate exercise facilities, create a double disadvantage for female students. A study examining leisure-time sedentary behavior found that boys (51.1%) and girls (66.7%) in the UAE far exceeded the global average of 26.4% for high leisure-time sedentarism — the highest rates among 10 Eastern Mediterranean countries examined (Hamdan et al., 2025).

Dietary patterns and weight status present a similarly concerning picture. A large cross-sectional study enrolling 4,728 female university students across multiple UAE institutions found significant associations between consumption of sugar-sweetened beverages — including soft drinks, energy drinks, and juices — and overweight/obesity in both Emirati and non-Emirati populations (Al Sabbah et al., 2024). A separate UAEU-led study found that 31.4% of surveyed female undergraduates were overweight or obese ( $BMI \geq 25$ ), with obesity prevalence slightly higher among Emirati students (20.9%) than non-Emirati counterparts (19.9%; UAEU, n.d.). The three principal behavioral predictors were poor sleep quality, frequent breakfast skipping, and sedentary lifestyle.

The physical-mental health nexus was quantified in a large study of 12,782 UAE adolescents and young adults (Hamdan et al., 2025), which found that physically inactive students had a 92% higher likelihood of depression compared to physically active peers ( $OR = 1.92$ ; 95%  $CI: 1.68–2.19$ ) after adjustment for confounders. Overweight students had 4.34 times and obese students 5.62 times greater odds of depression than those with normal BMI. These findings align with

a 2025 systematic review of 38 studies across multiple countries (Li & Huang, 2025) that confirmed consistent associations between physical activity and reduced anxiety, depression, and stress in university populations.

**Table 2** Key Physical Activity and Nutritional Health Metrics — UAE University Students

Health metric	Key finding	Value	Source
Waking hours sedentary	Objective accelerometry	~80% (>12 hrs/day)	Dalibalta et al. (2021)
Female students sedentary/low active	Daily step count classification	76.6%	Dalibalta et al. (2021)
Males meeting PA recommendations	Self-report, aged 18–24	19.1%	UAE national survey
Females meeting PA recommendations	Self-report, aged 18–24	28.6%	UAE national survey
Female students overweight/obese	BMI $\geq$ 25 kg/m <sup>2</sup>	31.4%	UAEU Study (Hossain)
Obesity prevalence (Emirati female)	BMI $\geq$ 30 kg/m <sup>2</sup>	20.9%	UAEU Study (Hossain)
Depression OR, inactive vs. active	Adjusted logistic regression	1.92 (95% CI: 1.68–2.19)	Hamdan et al. (2025)
UAE adult overweight/obesity rate	National adult population	~68%	EY MENA (n.d.)

Note. PA = physical activity; BMI = body mass index; OR = odds ratio; CI = confidence interval.

### 3.2.3. Domain 3: Digital Health Literacy and AI-Assisted Health Behavior

A 2025 cross-sectional study published in *Frontiers in Digital Health* conducted the first comprehensive assessment of eHealth literacy among UAE public university students using the validated eHEALS instrument (Frontiers Digital Health, 2025). The mean eHEALS score of 29.3 out of 40 indicates moderate literacy — a finding that carries particular significance given that UAE students have near-universal internet access and one of the highest social media engagement rates globally. The study revealed a pronounced trust-behavior gap: 74.7% of Emirati adolescents and young adults reported basing health-related decisions on social media information, yet 83.7% simultaneously identified health authorities as the most trustworthy source.

The same study assessed student attitudes toward ChatGPT as a health information tool using the Technology Acceptance Model Edited to Assess ChatGPT Adoption (TAME-ChatGPT) instrument, validated across five Arab countries. Students with higher eHealth literacy scores were more likely to perceive ChatGPT as useful in healthcare contexts while simultaneously expressing greater concern about its risks. This suggests that health literacy functions as a critical appraisal skill for AI-generated health content, and that low-literacy students may be more susceptible to uncritical adoption of potentially unreliable AI health information.

A curriculum audit of UAE universities (Nabhan et al., 2025) found that formal digital health literacy education is largely absent from both health science and non-health science degree programs — a gap that persists despite the UAE's stated national digital health strategy and the country's position as a regional hub for health technology innovation. The authors called for urgent integration of core digital health competencies — including health information appraisal, AI tool literacy, and health data privacy — into all university curricula.

## 4. Discussion

This scoping review provides the first integrated mapping of evidence on three convergent health challenges facing UAE university students: a mental health crisis shaped by high prevalence, cultural stigma, and institutional underinvestment; epidemic levels of physical inactivity and obesity driven by Gulf-specific environmental and cultural barriers; and a digital health literacy deficit that creates vulnerabilities even within a population of near-universal internet connectivity. Each domain is well-documented independently; what this review demonstrates — and what has not been previously synthesized — is their deep interdependence and shared structural determinants.

The evidence on mental health is consistent and concerning. Anxiety affects over 60% of students in multiple independent samples; depression risk is nearly five times greater in first-year students aged 18–20 than in older peers; and female and final-year students are disproportionately burdened across all dimensions. These patterns are not simply a UAE phenomenon — they mirror trends documented in systematic reviews of GCC and global student populations (Zhang et al., 2025; Guerriero et al., 2025). However, the UAE context adds culturally specific dimensions: the role of Emirati social values in deterring help-seeking, the underrepresentation of male students in mental health research, and the absence of evidence-based, culturally adapted interventions that distinguish this setting from high-income Western contexts where most intervention studies have been conducted.

Physical inactivity data from objective measurement tools offer some of the most striking findings in this review. A student population spending 80% of waking hours sedentary — exceeding levels documented in elderly institutionalized populations in some global comparisons — reflects a structural problem that behavioral interventions alone cannot address. Heat, car-dependent urban design, gender norms, and the absence of mandatory physical education in UAE higher education all contribute. The strong association between physical inactivity and depression (OR = 1.92) reinforces the importance of physical activity promotion not only as a metabolic health intervention but as a mental health strategy — one that has been validated in global systematic reviews (Li & Huang, 2025) but remains largely unimplemented in the UAE higher education context.

The digital health literacy findings introduce a dimension that distinguishes this scoping review from prior work on Gulf student health. The UAE's extreme digital connectivity has not translated into effective health information behavior; instead, it has created conditions for widespread health misinformation consumption. The gap between stated trust in health authorities and actual reliance on social media for health decisions is not merely an academic finding — it represents a policy-relevant vulnerability in a population that will increasingly use AI-powered health tools, wearables, and telemedicine as primary health interfaces. The regulatory and educational frameworks for responsible AI health engagement are not yet in place in UAE universities (Nabhan et al., 2025).

Several methodological observations deserve emphasis. The 79% prevalence of cross-sectional designs means that the field knows a great deal about the burden of these health problems but relatively little about their causes, developmental trajectories, or what interventions can effectively address them. The almost exclusive focus on female students in mental health studies — while partially explained by institutional access constraints — leaves male student health as a significant uncharted territory. The absence of validated Arabic-language instruments for eHealth literacy and the limited psychometric work on existing scales in UAE populations are additional gaps that compromise the rigor of the evidence base.

This review has limitations. As a scoping review, no formal quality appraisal of included studies was undertaken, limiting conclusions about the strength of individual findings. Publication bias may inflate prevalence estimates. The restriction to English-language publications may have excluded relevant Arabic-language studies from Emirati national institutions. And the review timeframe of 2019–2026, while capturing the most current evidence, may miss important pre-pandemic baseline data from earlier years.

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## 5. Conclusion

This scoping review documents three deeply interconnected and mutually reinforcing health challenges facing UAE university students: high prevalence of anxiety, depression, and sleep disturbance amplified by cultural stigma; epidemic levels of physical inactivity and obesity driven by Gulf-specific environmental and cultural barriers; and moderate digital health literacy that leaves students vulnerable to health misinformation in an era of rapid AI adoption. These challenges share behavioral and structural determinants — the culturally mediated avoidance of formal health services, the car-dependent and heat-constrained environment, and the absence of health literacy education in university curricula — that resist siloed, domain-specific solutions.

Future research must prioritize longitudinal and experimental designs, actively recruit male student populations, and develop validated Arabic-language health instruments. Institutions should integrate mental health screening, gender-inclusive physical activity programming, and digital health literacy into core curricula. National policy should establish explicit student health targets within the UAE Vision 2031 framework and invest in a national longitudinal student health monitoring system. The UAE's young, highly educated, and digitally connected student population represents both a significant public health priority and an extraordinary opportunity: with coordinated, evidence-based, culturally grounded investment, measurable improvements in student health trajectories are achievable.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

The authors declare no conflict of interest

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