

RESEARCH NOTE

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# Impact of psychological wellbeing and academic readiness on early medical student attrition: educators' perspective

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## Abstract

**Objectives** Medical school attrition is a complex problem, and improvement can only be achieved through the integrated involvement of all stakeholders. Mental health disorders are perceived to be prevalent among medical students in UAE. This study aimed to explore educators' perspectives on the high rate of early medical school attrition in UAE.

**Results** The findings suggest that the early medical school attrition rate is correlated with students' inadequate academic readiness and their inability to cope with the psychological demands of studying medicine in English. To reduce the attrition rate, the educators proposed preparatory courses to enhance students' self-learning skills and academic readiness for university studies, along with provision of targeted academic support throughout their medical studies. Psychological well-being and academic preparedness for studying medicine in English is a prime target for a program to reduce dropout from medical schools.

**Keywords** Admission criteria, Attrition, Educator, Medical education, Medical school, Student

## Introduction

Medical student attrition worldwide occurs predominantly in the early years of medical school [1, 2]. Dropping out of medical school has significant emotional, social, and financial consequences for students, faculty, medical schools, and society. The phenomenon of medical student attrition in Arabic-speaking countries varies widely [3–5]. In the UAE, the early attrition rate among

medical students is significantly higher than the international average [6]. In one study, one-third of students considered dropping out during the first two years of medical school [7]. However, data are limited on the reasons and risk factors for the high attrition rate among Emirati medical students.

Medical school attrition is a complex issue due to the interplay of different factors on students' academic progress and decisions to withdraw from medical school [8]. Early attrition could be associated with mental health problems, socioeconomic factors, medical school policies, and the curriculum [9–11]. Economic disadvantages and racial underrepresentation in the medical field were also found to increase the risk of attrition from medical schools [12].

The high rate of early medical school attrition in UAE (~30%) is a concern [13]. Generally, Emirati medical

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students experience high levels of stress during their medical studies [14]. Notably, they perceive their psychological well-being as the primary cause of withdrawal from medical school. Mental health problems could be either the cause or the consequence of academic struggling. Therefore, soliciting the educators' perspectives would be helpful for developing a holistic, contextual solution to ameliorate medical school attrition. Thus, this study aims to explore the perspectives of the faculty, administrators and curriculum leadership on the causes of and solutions for the high rate of early medical school attrition.

## Materials and methods

This cross-sectional study was conducted at the College of Medicine and Health Sciences (CMHS) between January and June 2022. The CMHS was established in 1984 in the City of Al Ain, United Arab Emirates. It offers a six-year MD program that integrates basic and clinical sciences and includes two years of premedical studies. To gain an in-depth view of the educators' experience, the study sought perspectives from both the faculty and the curriculum leadership. Ethical approval for this study was obtained from the Social Sciences Research Ethics Committee (reference number ERS\_2019\_6027). Informed consent was obtained from each participant. The survey's first page contained information on the rationale of the study and statements ensuring the confidentiality of respondents. The participants were given the choice to decline or to proceed to answer the survey questions.

## Questionnaire development

A 26-item self-administered questionnaire (Supplementary file) was designed to determine the teachers' opinions on the high rate of early student attrition. The questionnaire design took into consideration the factors proposed in the literature [2–5]. The three main domains were covered: admission process, learning environment, and curriculum in use. Additional questions were included to explore teachers' views on measures to reduce student attrition at the medical school. Nine other questions were used to identify the demographics and characteristics of the study participants. The questionnaire items utilized Likert scales and were reviewed by two independent faculty members at the College of Medicine, UAE University (UAEU) to assess the face validity of the survey items and to provide feedback on the clarity and conciseness of the questions. No major changes were necessary. The questionnaire was emailed using Google Forms (Google LLC) and all 34 faculty members (9 females, 25 males) teaching in the premedical program were invited to participate in the study. The invitation letter provided a brief explanation of the study and explicitly stated that participation was entirely voluntary and

that participants could refuse to participate or to withdraw at any point without penalty.

## Thematic analysis

The results of the survey were used to develop semi-structured interviews for curriculum leadership, including the dean, assistant deans, program directors, and the chair and members of the undergraduate curriculum committee. Eight interview sessions were conducted *via* Microsoft teams. An interview plan was developed to guide the sessions, and additional open questions, prompts and probes were used to elicit more detailed responses. Each interview lasted approximately one hour. The information gathered was recorded and repeatedly reviewed and revised until sufficient data were obtained to capture most of the themes [15]. An inductive approach to thematic analysis was used, which enabled an expansive analysis of the entire dataset (Fig. 1). The six steps outlined by Braun and Clarke (2006) were followed for thematic analysis [16]. Coding was done manually by one author (HA). After transcribing the data, the interesting features were coded and data relevant to each code were collated. Then, themes were generated in relation to the coded extracts and the entire data set. The generated themes were reviewed for accuracy of data representation. After refinement of the themes' definitions, the final report was generated.

## Results

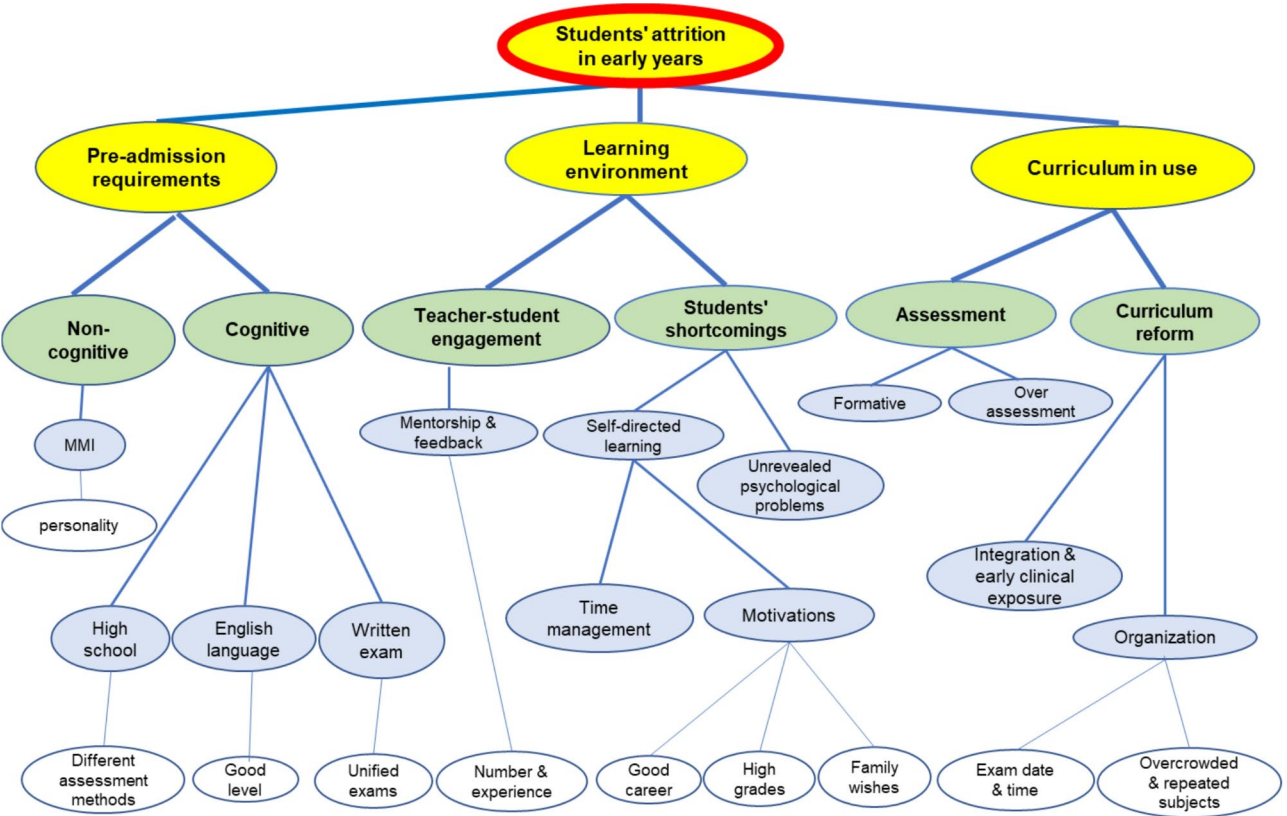
Fourteen faculty members (3 females, 11 males) teaching in the preclinical program completed the self-administered questionnaire. Of these, 9 (64%) have been teaching at CMHS for more than 10 years.

## Perceived attrition factors

Most of the respondents ( $n=13$ , 93%) indicated that poor time management skills and the inability to cope with the psychological stress of medical studies were important factors hindering the academic performance of students and potentially contributing to their dropout from medical school (Table 1). Four survey participants (29%) believed that the multiple Min Interview (MMI) was not useful for selecting students.

Some respondents ( $n=7$ , 50%) believed that a heavy and overcrowded curriculum, excessive assessment, and late clinical exposure contribute to student attrition (Table 1). The human anatomy and biological chemistry courses were particularly challenging ( $n=8$ , 57%). Overburdening the curriculum with less important courses and absence of proper mentorship programs may have negatively affected the students' academic performance and progress.

Most of the faculty ( $n=11$ , 79%) felt that the learning environment is favorable, with faculty members being



**Fig. 1** The manually generated thematic analysis. Themes are highlighted in yellow, subthemes in green, and basic themes in blue

Table 1	Top perceived reasons for early attrition from medical school
	Poor time management skills
	Mental and psychological demands of medical study
	Lack of critical thinking
	Weak English language skills
	Inappropriate selection of medicine as a career
	Lack of knowledge
	Lack of self-motivation
	Late clinical exposure

Table 2	Proposed actions to reduce early attrition from medical school
	Additional preparatory year of study before admission
	Decrease number of students admitted
	Curriculum reform with early clinical exposure in an integrated curriculum

supportive of medical students’ personal and academic growth. The study load was seen as moderate. However, most respondents ( $n=11$ , 79%) indicated that >75% of the students do not ask questions in class and never seek advice on their performance.

An additional preparatory year before student admission was among the most frequent suggestions for improving student academic performance. Table 2

presents the respondents’ suggestions to reduce the attrition rate.

**Thematic analysis**  
**Preadmission requirement**

Due to the varying assessment standards among high schools in the UAE, the participants believed that the CMHS written admission examination is essential for a fair evaluation of the level of all applicants. Medical students must be proficient in English in order to study medicine, but incorporating extended English language courses in the school curriculum might create time constraints and increase student burden.

Multiple mini-interviews (MMS) are not well-suited to detect deficiencies in personality traits, and psychometric studies may be necessary to accurately evaluate non-cognitive variables.

**Quotes** “Students should have a decent level of English to progress in studying medicine.”  
“Psychometric studies may be needed to evaluate the non-cognitive variables accurately.”

**Learning and teaching environment**  
The inadequate number of faculty and inadequate experience may limit faculty engagement in mentoring. In

addition, most students lack essential skills for engaging in self-directed learning and seeking teacher feedback, mentoring, or advice. Students' self-motivation may not be high enough to study medicine, as many of them might have been pressured by their families to do so. Many students may have unrevealed psychological problems. Therefore, establishing a well-being counseling facility might be necessary to provide psychological support.

**Quote** *"Most students expect to be spoon-fed and refuse to be weaned off."*

### **Curriculum planning**

Overassessment is a significant problem in the current curriculum. The current course grades are a composite score of multiple mini-summative exams. Student preparation for many summative assessments burdens their time management. Summative assessments are usually not followed by constructive feedback and thus may not promote learning. Also, examination dates overlap, which sometimes confuses students. Shortening the less important courses and omitting repetitions of subject matter might save time for more difficult courses. Engaging the students in peer learning groups may improve their self-directed learning, self-motivation, and academic level. Early clinical exposure would help students to learn the application of basic science concepts.

**Quotes** *"These multiple assessments made it more difficult for the students to manage their time and increased their time constraints."*

*"Engagement in peer learning groups may improve their academic level."*

### **Discussion**

The high attrition rate early in medical school in UAE compared to other countries is a concern, as it may reflect a high level of stress among these students [5]. The transition from high school to university studies is stressful for many students. Moreover, for non-native English speakers, the use of English as the instruction language could exacerbate the levels of stress and academic difficulties.

In this study, the medical school educators considered inadequate academic and English language skills as important drivers of the high medical school attrition rate. In contrast to other similar studies, socioeconomic factors seem to be less important in the attrition phenomenon in UAE [12, 17, 18]. The provision of state-financed higher education makes financial issues of less concern for Emirati medical students.

Inadequate academic preparedness has also been reported in other university colleges in UAE [4]. Students with poor learning skills and poor psychological

resilience often struggle to adjust to the academic demands of university studies [11, 19, 20], even though the medical schools strive to select the best students by using different measures to guide the admission process [21–25].

The study participants proposed pre-admission screening for mental health and academic self-learning skills to identify students at risk of withdrawal from medical school. Mental health disorders, in combination with other academic and personal problems, often deteriorate throughout medical training. Dropout decisions are often mediated by failure to integrate students into the institution's academic and social systems [26]. Thus, a referral system and assignment of individual mentors could provide early support to avoid dropout decisions. Implementing such a referral system would also increase the awareness among students and staff of the importance of early identification and referral of students who struggle academically.

### **Limitations**

Although we secured adequate representation in the study responses, the small sample limits the generalizability of the findings to other medical schools. The interviews included all key stakeholders in curriculum management and were thus considered representative within this homogeneous sample [15]. In addition, including the perspectives of lifelong educators and triangulating their responses with the leadership interviews provides additional strength to the inferences drawn from the study findings. The study findings could be applicable to other publicly funded undergraduate medical programs that admit students directly from secondary school, but they might not be applicable to institutions that admit international students who pay tuition fees.

We believe that these findings will guide a contextual, multi-system approach to improving students' educational and learning environments in UAE [27]. The approach should consider the dynamic nature of student attrition and continuously integrate the perspectives of all stakeholders when redesigning the admission process, medical curriculum, and teaching program [8].

### **Conclusions**

An integrated multi-system contextual approach is needed to address the high attrition rate at medical schools in UAE. Pre-admission screening and targeted preparatory courses to enhance the students' academic self-learning skills would decrease the students' early attrition rate. Research is needed to explore the impact of the secondary school curricula on the readiness of Emirati students for university studies.

### **Abbreviations**

CMHS College of Medicine and Health Sciences  
 EmSAT Emirates Standardized Test  
 MD Doctor of Medicine  
 MMI Multiple mini-interview  
 UAE United Arab Emirates  
 UAEU United Arab Emirates University

## Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s13104-024-07017-x>.

Supplementary Material 1

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## Author contributions

AH: Study design, Data collection, analysis, Manuscript writing, and final draft approval. MM: Study design and approval of the final draft. NM: Study design, Data analysis, and approval of the final draft. SF: Study design, Data analysis, and approval of the final draft. OB: Study design, Data analysis, Manuscript writing, and final draft approval.

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## Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

## Declarations

### Ethics approval and consent to participate

Ethical approval for this study was obtained from the Social Sciences Research Ethics Committee, United Arab Emirates University, reference number ERS\_2019\_6027. Informed consent was obtained from each participant to participate in the research.

### Consent for publication

Informed consent in written form was obtained from each participant to publish their unidentifiable research data.

### Competing interests

The authors declare no competing interests.

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## References

- AAMC. Graduation rates and attrition rates of U.S. medical students. AAMC Data Snapshot. In: Association Am Med Colleges 2023:1–2.
- Ahmady S, Khajeali N, Sharifi F, Mirmoghtadaei ZS. Factors related to academic failure in preclinical medical education: a systematic review. *J Adv Med Educ Prof*. 2019;7(2):74–85.
- Abdulghani HM, Alanazi K, Alotaibi R, Alsubeeh NA, Ahmad T, Haque S. Prevalence of potential dropout thoughts and their influential factors among Saudi Medical Students. *Sage Open*. 2023;13(1):21582440221146966.
- Ashour S. Analysis of the attrition phenomenon through the lens of university dropouts in the United Arab Emirates. *J Appl Res High Educ*. 2020;12(2):357–74.
- Anand A. Attrition rate and Reasons for Attrition in Medicals Schools Worldwide-An Analysis. *Texila Int J Basic Med Sci*. 2018;1(3):1–6.
- Hefny AF, Almansoori TM, El-Zubeir M, Albawardi A, Shaban S, Magzoub ME, Zoubeydi T, Mansour NA. Relationship between admission selection tools and student attrition in the early years of medical school. *J Taibah Univ Med Sci*. 2024.
- Amiri L, Al Mugaddam F, Javaid SF. Medical students' perspective of the motivations and limitations of studying medicine: a cross-sectional study from the United Arab Emirates. *Middle East Curr Psychiatry*. 2023;30(1):57.
- Hamshire C, Jack K, Forsyth R, Langan AM, Harris WE. The wicked problem of healthcare student attrition. *Nurs Inq*. 2019;26(3):e12294.
- O'Neill LD, Wallstedt B, Eika B, Hartvigsen J. Factors associated with dropout in medical education: a literature review. *Med Educ*. 2011;45(5):440–54.
- Picton A, Greenfield S, Parry J. Why do students struggle in their first year of medical school? A qualitative study of student voices. *BMC Med Educ*. 2022;22(1):100.
- Aina C, Baici E, Casalone G, Pastore F. The determinants of university dropout: a review of the socio-economic literature. *Socio-Economic Plann Sci*. 2022;79:101102.
- Nguyen M, Chaudhry SI, Desai MM, Chen C, Mason HRC, McDade WA, Fancher TL, Boatright D. Association of Sociodemographic Characteristics with US Medical Student Attrition. *JAMA Intern Med*. 2022;182(9):917–24.
- Hefny AF, Albawardi A, Khan MA, Fathi MA, Mansour NA. Students' perspectives on their early dropout of medical school. *J Educ Health Promotion*. 2024;13(1):36.
- Abdel Aziz K, Okasha T, Bhugra D, Molodynski A, Alkhyali F, AlNeyadi N, AlSheryani M, Alyammahi S, El-Gabry DA. Mental health, wellbeing and burnout among medical students in the United Arab Emirates. *Int J Soc Psychiatry*. 2023;69(4):985–93.
- Guest G, Namey E, Chen M. A simple method to assess and report thematic saturation in qualitative research. *PLoS ONE*. 2020;15(5):e0232076.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Res Psychol*. 2006;3(2):77–101.
- Pusztai G, Demeter-Karászi Z, Alter E, Marincák R, Dabney-Fekete ID. Administrative data analysis of student attrition in Hungarian medical training. *BMC Med Educ*. 2022;22(1):317.
- Maher BM, Hynes H, Sweeney C, Khashan AS, O'Rourke M, Doran K, Harris A, Flynn SO. Medical school attrition-beyond the statistics a ten year retrospective study. *BMC Med Educ*. 2013;13:13.
- Lin YK, Lin CD, Lin BY, Chen DY. Medical students' resilience: a protective role on stress and quality of life in clerkship. *BMC Med Educ*. 2019;19(1):473.
- Abdulghani HM, Al-Drees AA, Khalil MS, Ahmad F, Ponnampuruma GG, Amin Z. What factors determine academic achievement in high achieving undergraduate medical students? A qualitative study. *Med Teach*. 2014;36(Suppl 1):S43–48.
- Kreiter CD, Axelson RD. A perspective on medical school admission research and practice over the last 25 years. *Teach Learn Med*. 2013;25(Suppl 1):S50–56.
- Wilkinson TM, Wilkinson TJ. Selection into medical school: from tools to domains. *BMC Med Educ*. 2016;16(1):258.
- Edwards JC, Elam CL, Wagoner NE. An admission model for medical schools. *Acad Med*. 2001;76(12):1207–12.
- Fayolle AV, Passirani C, Letertre E, Ramond A, Perrotin D, Saint-Andre JP, Richard I. [Predictive validity of selection process in medical school, a systematic review of the literature]. *Presse Med*. 2016;45(5):483–94.
- Al-Nasir FA, Robertson AS. Can selection assessments predict students' achievements in the premedical year? A study at Arabian Gulf University. *Educ Health (Abingdon)*. 2001;14(2):277–86.
- Aljohani O. A comprehensive review of the major studies and theoretical models of student retention in higher education. *High Educ Stud*. 2016;6(2):1–18.
- Lönngren J, van Poeck K. Wicked problems: a mapping review of the literature. *Int J Sustainable Dev World Ecol*. 2021;28(6):481–502.

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