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Medical students' perspective of the motivations and limitations of studying medicine: a cross-sectional study from the United Arab Emirates

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Abstract

Background Incentives and disincentives to study medicine are complex concepts and may involve a dynamic balancing act between financial, personal, and social reasons. These processes have not been adequately explored in the Middle East. This study explores students' thoughts and feelings about studying medicine at the United Arab Emirates University, Al-Ain. This descriptive cross-sectional study was conducted between April and August 2019. An online, self-administered questionnaire consisting of 22 questions was distributed to the students enrolled at the College of Medicine and Health Sciences, United Arab Emirates University. The survey questions focused on motivations to study medicine and limitations that prevent choosing medicine as a field of study.

Results Two hundred and five (33%) of 621 students in the six-year program completed the questionnaire. Forty-three percent of the responders were from the first two years of medical school. The decision to study medicine was reported as their own by 92%. Eighty-eight percent of the students did not consider gender a limitation for studying medicine, and 62% had a defined medical specialty to pursue. One-third considered quitting medicine, mainly during the first two years. Reported difficulties included mental health problems (stress, anxiety, and depression), social isolation ('having no life,' 'being lonely'), curriculum content (overwhelming workload), college condition/rules (poor condition of the hostels, lack of support, scant passion, and strict rules), and rational thinking (inadequate high-school preparation).

Conclusions These results justify implementing an effective counseling program, especially during the early academic years. The quality of high-school education requires careful thoughtfulness from the department of education with input from our medical schools. Other modifiable factors include the methods of assessment, available supportive resources, and extracurricular activities.

Keywords Middle East, United Arab Emirates, Medical Students, Dropouts, Motivations, Limitations, Medical education

Background

In the context of medical education, motivation can be defined as "the translation of a person's basic psychological needs and drives, filtered through their view of the world, toward an action with an anticipated result" [1].

Motivation to choose medicine as a career, both intrinsic and extrinsic, is difficult to measure because

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it relies on self-report data from students. Data about motivation can change over time as a student goes through the transition from school to university, applying for courses, obtaining (or not obtaining) the relevant grades, selecting a course, and finally accepting a place and coping with the learning experiences and assessments that are part of medical training. Iterative questionnaires involving potential applicants and sometimes their parents have been suggested as reliable and valid instruments to measure the strength of motivation for medical training [2].

Many studies have investigated the factors that motivate students to study medicine worldwide. One literature review identified 24 academic articles published between 2006 and 2018 and found that motivations vary according to the country's income level. The primary motivating factors were: "scientific (interest in science/medicine, social interest, and academia, flexible work hours and work independence), societal (prestige, job security, financial security) and humanitarian (serving the poor and underprivileged) in high,—upper-middle and low-income countries respectively" [3]. Another study from New Zealand found that all medical students had both intrinsic and extrinsic motivation factors. All were influenced by the family members' professions and educational support, but those with Maori and Pacific heritage were motivated by collectivism, with an expectation to work together with the community to support each other [4]. People from collectivistic cultures are more likely to have an interdependent view of themselves [5]. Societies guided by a collective doctrine have interdependent support the individual throughout their study so they may remain motivated, experience success, and return to their community with new knowledge and skills to share [4]. In contrast, other students had more individualized motivating factors [4]. Income level and culture, therefore, appear to affect the type of motivation that medical students have.

While it is not possible to isolate specific demographic variables concerning student dropout, studies have shown that academic struggles in medical school may be strongly associated with dropout [6]. A study of medical students in the United Kingdom explored a connection between ethnicity and achievement levels and found that students from non-white, Muslim, and lower-achieving groups had less effective social capital, for example, less interaction with tutors, clinicians, and other members of more expert social groups [7]. This suggests that dropout can be prevented by providing opportunities for networking across the hierarchies of universities and hospitals, especially if these opportunities are targeted at students from marginal groups who are more likely to lack the social capital of those from dominant social groups.

The available literature on students in higher education and their supervisors shows a consistently high dropout rate for dissertations and vastly different perspectives from the two groups. Supervisors tend to identify the lack of timeliness of doctoral students and personal differences as the main reasons for dropout, while the students report feeling ill-prepared for the statistical part of their research [8]. This suggests that it is essential to explore both tutor and student views when researching dropouts and that a mismatch between the expectations of teachers and students could be a relevant factor that contributes to medical student dropout.

Limited research has been done in Middle Eastern countries on the factors behind students' decision to join medical studies and the reasons for contemplating leaving the course, including the impact of stress and mental health problems [9–12]. This is despite the recent expansion of higher education institutions across the region. One issue identified in these countries is the requirement to have English as the medium of instruction in medical schools [13]. Most students start their university courses straight from high school and are highly motivated to study medicine, as this is a prestigious choice for them, which brings status to students and their families. However, much of the high school English provision in these countries is poor, and motivation issues arise when this affects student grades in their first year at medical school. The struggles students face mainly due to poor English are directly at odds with their self-image as excellent students based on their high school results [13]. Judging by the results of the international studies reviewed above, however, there must be other factors involved in medical student dropout in this region, and further primary research is required to identify and quantify these factors.

Many high-school graduates select medicine as their first choice for reasons that are still not fully understood. In contrast, the motivation for choosing a medical specialty has been well studied [14–16]. A specific career choice is often a blend of inclination before starting medical school and experience gained during the training [15, 16]. Contributing factors include interest and curiosity (e.g., personality attributes, special skills, role models, and influence of mentors), cultural expectations (e.g., gender, lifestyle, committed relationships, and family background), work advantage (e.g., part-time and parental leave), and socioeconomics (e.g., prestige, family income, and market forces) [17–23]. These factors influence the decisions of a medical student to join medicine and, therefore, increase the medical field workforce, which is essential, especially in countries with limited resources [24–28]. Therefore, it is important to identify the factors that attract students to medicine and retain

them in the profession [29–34]. This study addressed the students' thoughts and feelings about studying medicine. The objectives included assessing how far students' limitations deviate from the institution's philosophy and commitment to providing quality education. The results would provide valuable data for guiding future academic planning and decision for educational institutions like the College of Medicine and Health Sciences, United Arab Emirates University.

Methods

This cross-sectional study was conducted in the College of Medicine and Health Sciences (CMHS) between April and August 2019. 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. The program includes two-year of premedical studies, also offered by the College [35]. All 621 medical students registered at CMHS at the time were eligible. Based on the feedback from a student focus group, a 22-question cross-sectional online survey was created (Additional file 1). The self-administered questionnaire was distributed via e-mail to all students at the College of Medicine and Health Sciences, United Arab Emirates University (UAEU). The study was approved by the UAEU Division of Research and Graduate Studies Ethics Committee (ERH-2017–5554 17–30). Students were informed about the nature of the study, and confidentiality was assured. The survey questions focused on motivations to study medicine and limitations that prevent choosing medicine as a field of study. The objectives of this survey included collecting general demographic data about medical students (e.g., age, gender, current year at medical college, nationality, and emirate of residency). We adapted components of the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) to improve the authenticity and generalizability of the survey's results [36]. The survey explored participants' high school status and motives behind enrolling in medical college. Family connections to medicine were explored, as were their influences on the student's motivation towards and professional intentions regarding their careers in medicine. Future plans regarding career, financial perceptions, and interest in specific medical specialties were assessed. We explored reasons for considering leaving medical education and what had supported the continuance of study. Variable frequency analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 26. The survey was pre-tested on 20 students from the CMHS, which resulted in minor modifications to the questionnaire. The pre-test responses were discarded, and the pre-test participants were resurveyed with the rest of the students.

Results

Demographics

A total of 205 students responded to the survey, two-thirds female and a third male. The overall response rate was 33% (205/621). The study cohort was overwhelmingly from the United Arab Emirates (UAE), with one Omani and five Yemeni students. Of the UAE students, the majority (61.5%) were from Abu Dhabi. In terms of their year of study, there were respondents from across the seven years of undergraduate medical education; first-year students (29.8%) and fifth-year students (22%) were those most prominently featured. The sample also included four recently graduated students who had yet to start clinical work. Their opinion was, therefore, not influenced by their experience at work. Table 1 details the demographic characteristics of the participants.

Factors motivating students to choose medicine

Students surveyed indicated that interest in the discipline was developed in childhood or high school (93.2% of respondents). A high percentage of participants reported high achievement in compulsory education, with 85% of those surveyed having high school grades in the 90–100 decile. The overwhelming majority of medical students (92%) made their own decisions to go to medical school;

Table 1 Sample characteristics ($n = 205$), Values are number (%)

Gender, n (%)	
Males	66 (32.2)
Females	139 (67.8)
Nationality, n (%)	
UAE	194 (94.7)
Oman	1 (0.5)
Yemen	5 (2.4)
Others	5 (2.4)
Home Emirates n (%)	
Abu Dhabi	126 (61.5)
Dubai	24 (11.7)
Ras Al Khaimah	17 (8.3)
Sharjah	17 (8.3)
Ajman	4 (1.9)
Fujairah	11 (5.4)
Umm Al Quwain	6 (2.9)
Year of school, n (%)	
One	61 (29.8)
Two	28 (13.7)
Three	32 (15.6)
Four	21 (10.2)
Five	45 (22)
Six	14 (6.8)
Graduate	4 (1.9)

70.7% of those surveyed applied to a single institution. The perceived high status of a doctor in society was cited by 19 students (9.3%) as their reason to choose Medicine, while another 25 (12.2%) confessed not being sure of their motivations to choose Medicine at the time when the decision was taken. Reasons for the choice of medical school focused on reputation and proximity to home (86.8% of respondents identified one of these factors), inability to study abroad, and the public status of the university being minority considerations. Table 2 shows the breakdown of responses received from the participants.

Factors for considering dropping out of medical school

In focusing on perceived limitations to studying medicine, gender and the course length were considered. 85 (41.5%) students considered quitting medicine at some point during their studies. The survey indicated that leaving medical school might be considered at any point up to the final year of studies, as depicted in Table 3.

Gender was not considered by the overwhelming majority (88%) to be a factor inhibiting medical studies. This view found almost equal support among the female and the male respondents (89% and 88%, respectively). The length of the course was a concern to almost half (45.4%) of those surveyed. Table 4 describes the reasons stated by students who contemplated abandoning their medical studies.

While there was confidence (67.8%) that graduating doctors would find sectoral employment, there was uncertainty and lack of faith in immediate career terms (32.3% combined). Most respondents (73.2%) expected that they would return to their home emirate and hopefully practice medicine there (Table 2).

Discussion

The decision to enroll in a medical school is challenging and needs trustworthiness and genuine commitment. Some students choose medicine to become distinguished, as it is perceived as prestigious; others have financial motivation as medicine is often gainful employment. In developing countries, the study of medicine is mainly enforced by the family [37, 38]. These variables, however, have not been adequately explored in Middle Eastern countries such as the United Arab Emirates.

Expectations and limitations of medical studies

This study looked into potential factors that drive youth in Middle Eastern culture to enter medical school. A vast majority of surveyed students stated that applying to medical schools was their own decision, made before and during high school. This finding contrasts with previous findings of the role played by high school grades, family, and social pressure in young individuals choosing their career pathway [39]. Nonetheless, societal perception of Medicine being a prestigious profession contributed to the decision-making process for some of the study participants. The presence of a role model was also regularly stated as a reason to choose Medicine as a career by our respondents.

We tried to explore when students decide on their future specialty choice. Sixty-two percent of the students reported they had a preferred medical specialty to pursue when entering medical school. This finding supports the idea of approaching prospective medical students early in their middle and high school education to provide practical information about various medical subspecialties. This, in turn, will help students make an informed decision about the future path they wish to embark on. Medical training is expensive and takes longer than other kinds of training, which means that the stakes are high for those who choose this field of study. High dropout levels bring negative consequences for societies and students and their families, so it is crucial to investigate this issue of medical student dropout. Attrition rates in medical schools worldwide are relatively high, with one study finding an average dropout rate of 11.1% and some medical schools reporting as much as 26.2% [40]. In this study, the research data collected on respondents' consideration of abandoning studying medicine (and on their ultimate decision to continue) involved 85 students, each of whom had indicated that they had explored leaving medical school. The initial reasons were found to be diverse: mental health-related considerations, curricular concerns, broader college contexts, and curriculum-specific reasons were all cited in approximately equal numbers (between 10 and 15 students) as being of principal concern. Two students thought that a cost–benefit analysis was to be completed and that a medical qualification and the promise of a career might not be worth a multiple-year commitment when there was uncertainty that medicine had been the correct choice.

Managing students' expectations

The diversity of concerns is interesting, as it indicates the spectrum of pressures on medical students, the need for appropriate support mechanisms, and the provision of quality, well-equipped, and relevant work and social environments for students. Links to curriculum-related concerns – the perception of work overload, the perceived difficulty of the course, incremental higher expectations, lower than expected achievements – might be appreciable in the context of the demands of medical qualifications. Nevertheless, universities should be aware of student perceptions. They might consider the importance

Table 2 Responses to the survey ($n=205$). Values are numbers (%)

Whose decision was it for you to apply to medical schools?	
Mine	189 (92.2)
My mother's	1 (0.5)
My father's	2 (0.9)
Both my parents'	3 (1.5)
Others	10 (4.9)
When did you start having an interest in medicine?	
Since I was a child	67 (32.7)
At high school	124 (60.5)
After entering another college at the university	9 (4.4)
Others	5 (2.4)
If you chose 'others', please specify	
After entering the College of Medicine	2
Since serious illnesses in the family	1
Since watching medical TV series	1
Not sure	1
What was your overall grade in high school?	
A student (90–100%)	175 (85.4)
B student (80–90%)	29 (14.1)
C student (70–80%)	1 (0.5)
Did you apply to more than one medical school?	
Yes[a]	60 (29.3)
No	145 (70.7)
Did you apply to other colleges within the UAE University?	
Yes[b]	93 (45.4)
No	112 (54.6)
What was your reason for choosing the UAE University?[c]	
It is a public university	1 (0.5)
Studying is free	13 (6.3)
Close to your living emirate	32 (15.6)
It has a good reputation	146 (71.2)
Multinational expertise	1 (0.5)
Others	12 (5.9)
What was your reason for choosing medicine as a career?	
I scored high in my high school	53 (25.9)
I did not know what I wanted to become	25 (12.2)
The person who recommended medicine to me wanted me to be a doctor	32 (15.6)
Being a doctor is looked upon highly in our society	19 (9.3)
The person who recommended medicine to me was a physician	4 (1.9)
Others[d]	72 (35.1)
Is gender a limitation for studying medicine?	
Yes	24 (11.7)
No	181 (88.3)
Are the long years a limitation for studying medicine?	
Yes	93 (45.4)
No	112 (54.6)
Have you thought of a medical specialty to pursue?[e]	
Yes	128 (62.4)
No	77 (37.6)
Will you recommend studying medicine to high school students?	
Yes	124 (60.5)
No	81 (39.5)
Have you ever considered quitting studying medicine?	
Yes[f]	85 (41.5)
No	120 (58.5)
Do you have a family member who is a physician?	
Yes	91 (44.4)
No	114 (55.6)
What is your opinion of a physician's pay?	
More than other specialties	52 (25.4)
Average, like most other specialties	103 (50.2)
Less than most specialties	15 (7.3)
I do not know	35 (17.1)
How confident are you in finding a job once you graduate?	
Very Confident	139 (67.8)
Not confident	15 (7.3)
Not sure	51 (24.9)
Which emirate would you start working in?	
My emirate	150 (73.2)
Another emirate	55 (26.8)

[a] Two to five medical schools

[b] Colleges of engineering ($n=39$), science ($n=6$), and law ($n=20$)

[c] Some students cited more than one reason

[d] Cited reasons included 'helping people', 'making my family proud' 'interesting job with a chance to socialize'

[e] Cited specialities included surgery ($n=48$), psychiatry ($n=10$), paediatrics ($n=7$), medicine ($n=6$), dermatology ($n=4$), oncology ($n=2$), and radiology ($n=1$)

[f] Cited reasons are mentioned in Table 4

of proactivity with respect to managing expectations, offering a diverse and reasonable work and assessment load, and the course being meaningful from student perspectives regarding curricular design and implementation issues.

Table 3 Breakdown of students who considered quitting medical school according to gender and year group ($n=85$), values are number (%)

	Male ***n*=21 (24.7)**	**Female** ***n*=64 (75.3)**
Year 1	8 (9.4)	24 (28.2)
Year 2	10 (11.8)	20 (23.5)
Year 3	0	9 (10.6)
Year 4	3 (3.5)	6 (7.1)
Year 5	0	5 (5.9)
Year 6	0	0

Table 4 Reasons for considering quitting medical school ($n=85$), values are number (%)

Total number of students who considered quitting medical school	**85 (100)**
Reasons for considering quitting	
Stress and Mental Health	15 (17.6)
Social Reasons	15 (17.6)
Curriculum content	13 (15.3)
College conditions and regulations	10 (11.8)
Rational thinking/Change of mind	2 (2.4)
Not disclosed	30 (35.3)

In our study, students reported difficulties in various domains, including mental health problems (stress, anxiety, depression, anger, and fear), social isolation (having no life and being lonely), curriculum content (overwhelming and hard workload), college condition and rules (e.g., condition of the hostels, lack of support, judgmental, scant passion, and strict rules), and rational thinking (e.g., inadequate high-school preparation). We also identified factors related to a hypercritical and uncomfortable work and study environment and the impact on students' motivation, enjoyment, and collegiality. These are areas in which institutions might make improvements. The environments offered for study, in physical resourcing and accommodation as well as in cultural and attitudinal terms, need to be supportive of students and facilitative of focus, mutuality, and of studenthood as a positive and enjoyable (if industrious and challenging) time of life [8, 13].

The burden of medical studies on students' mental health

The impact of medical studies was felt in both mental health and social terms by 30 respondents. Anxiety, stress, and fear of failure were all factors in considering leaving the course in question, as were issues related to the perception of medical study being all-encompassing, leaving little or no time for other areas of life, or being provocative of feelings of loneliness. For one respondent, there were questions raised by their husband about their career trajectory. An offer here on the part of universities might relate to counseling provision, opportunities for collegiate reflection, and working to ensure that work-life balance is respected. Psychiatry and psychology departments of respective universities can play their part by helping students with any education and management of any mental health-related concerns during their studies.

For the students surveyed, the most often cited source concerning staying on course was personal reflection. Qualities such as perseverance, ambition, fear of failure, and desire to succeed were highlighted in student and professional terms. Minority factors included social support (from friends, peers, and family), the validation offered by high-performance on-course, and personal faith-related considerations.

Self-reliance is important in medical studies, though the survey indicates that students have to draw extensively from their own resources when facing course-related challenges. If support was available in counseling and related terms in a cohesive and accessible way, this might facilitate both openness about uncertainty and foster students' positivity towards their studies in valuable ways. To do otherwise is to risk potential being lost if students opt out of medical courses through a lack of guidance, collegiate support, or because of concerns that a proactive institution might address.

These results rationalize the need for effective counseling throughout the academic years. This is particularly important in the initial years of study when students are acclimatizing to campus life and the rigors of medicine. The quality of high-school education requires special attention from the decision-makers in education and input from medical schools. Other modifiable factors that need attention include assessment methods, the condition of the hostels, and extracurricular activities.

Limitations and suggestions for further research

One limitation of the study lies in the response rate of 33 percent. Another potential limitation arises from the lack of similar studies, making it difficult to compare the responses from medical students in this study with those of young people of the same age in other medical schools or non-medical university courses. Our study is the first step and is still exploratory. This is one of the initial studies in the United Arab Emirates that explores the factors pertinent to medical students during their time at medical school. This study reports the views of students from the largest, oldest, and the highest-ranking university in the United Arab Emirates [41]. We are confident that the results of this study will encourage further research, allowing for a comparison between students from varied fields and different universities. Examples like these are needed to encourage universities to collaborate more in identifying issues important to their students. To improve the quality of our online survey reports and the potential to generalize our results, we are inclined to continue using validated criteria like the Checklist for Reporting Results of Internet E-Surveys in similar future studies [36].

Conclusion

Challenge is to be expected when studying medicine, but not at the cost of motivation to succeed. This study helps improve our understanding of medical students' reasons behind choosing or quitting medicine. The results will facilitate developing and implementing policies and adapting counseling services to the needs of high school graduates enabling them to succeed in their quest to become successful future clinicians.

Abbreviations

UAE	United Arab Emirates
UAEU	United Arab Emirates University
CMHS	College of Medicine and Health Sciences
SPSS	Statistical Package for the Social Sciences

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s43045-023-00329-x.

Additional file 1. Studying Medicine between Motivations and Limitations: Survey Questionnaire.

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Disclosure

An abstract has previously been presented at a conference [42].

Authors' contributions

Leena Amiri was involved in the study design, data analysis, and writing of the manuscript. Fadwa Al Mugaddam was involved in study design, data analysis, and manuscript formatting. Syed Fahad Javaid contributed to the interpretation of the data and writing, reviewing, and editing of the manuscript. The author(s) read and approved the final manuscript.

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Availability of data and materials

The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

The study was approved by the UAEU Division of Research and Graduate Studies Ethics Committee (ERH-2017–555417-30). Participation in the survey was voluntary, and participants were informed about the nature of the study and their right to withdraw**.**

Consent for publication

Not applicable.

Competing interests

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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