

ORIGINAL ARTICLE

Medical Professionalism and its Association among Clinical Medical Students.

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Abstract

Medical professionalism is a crucial competency, defined as the behaviours and attitudes that embody core values such as trust, accountability, and patient-centered care. It is a dynamic trait that evolves primarily during medical education and residency. However, the relationship between contributing factors and professionalism remains unclear, as previous studies have reported mixed results. This study aims to explore the level of medical professionalism among clinical students at a local university and its associated factors. A cross-sectional study was conducted among all 302 clinical medical students at the university, recruited via universal sampling. The validated Learner's Attitude of Medical Professionalism Scale (LAMPS) was used as the assessment tool. Sociodemographic data, including educational background, parental occupations, and prior exposure to medical professionalism training, were collected. Significant associated factors were analyzed using chi-square tests and multiple logistic regression. The results showed that only 58.3% of students achieved a good medical professionalism score. Significant contributing factors included willingness to pursue a career in medicine (OR 4.5, CI: 2.37–8.49) and a previous attendance at an Islamic medical school (OR 1.7, CI: 1.05–2.76). In conclusion, fostering medical professionalism should begin early, before students enroll in medical school. The Islamic curriculum plays an important role in shaping students' professionalism. Additionally, screening prospective students for their willingness to pursue medicine is crucial in producing medical doctors with integrity.

Keywords: *Clinical students, factors, medical professionalism.*

Introduction

Professionalism, as defined by Merriam-Webster, encompasses 'the conduct, aims, or qualities that characterize a profession or a professional person,' with a profession being 'a calling requiring specialized knowledge and often long and intensive academic preparation.' In the medical context, professionalism embodies the values, conduct, and obligations that prioritize trust, accountability, and patient-centered care [1]. It is primarily imparted during medical education through lectures and role modeling in clinical settings, emphasizing the importance of an educational community for professional growth [2]. Professionalism is critical for maintaining high-quality care and trust in the healthcare system while fostering collaboration among healthcare teams [3].

A cross-sectional study conducted in Tehran, Iran, assessed medical professionalism knowledge among students and physicians using a questionnaire. Among 149 participants (mean age: 30.81 years; 61.64% male), 44.29% had heard of the term 'medical professionalism,' with no significant differences in knowledge based on age or degree [4]. Similarly, in Malaysia, a study at Universiti Sultan Zainal Abidin (UniSZA) found no significant differences in professionalism scores among medical students across different years of study ($P=0.996$). A Brazilian study using the 50-item Professional Attitudes Scale for Medical Students (PASMS-50) found that professionalism scores varied significantly only at the extremes of the age range (<20 and ≥ 26 years), likely due to differences in curriculum phases [5].

Gender differences in professionalism have yielded mixed results. Studies in Slovenia and Turkey reported higher professionalism scores among female students, attributed to traits such as empathy and communication skills [6,7]. Conversely, studies in Malaysia and Saudi Arabia found no significant association between gender and overall professionalism scores, though males scored higher in the 'duty or accountability' component [8,9]. Socioeconomic factors and educational background also appear to have

minimal influence on professionalism. In Brazil, no significant correlation was observed between family income and professionalism scores [5]. Similarly, secondary school type (public vs. private) did not impact attitudes toward professionalism [5]. While matriculation programs prepare students academically, their relationship with professionalism remains unclear. However, some studies suggest associations between professionalism and academic performance in specific clinical courses [10,11]. The absence of formal professionalism curricula in some institutions underscores the importance of structured teaching and assessment strategies. Institutions such as King's College London have implemented professionalism policies to guide and monitor student behavior, highlighting the role of leadership in fostering these values [12,13]. However, studies indicate a decline in professionalism scores during clinical years, as students shift their focus toward technical knowledge [5]. These findings emphasize the need for targeted interventions to support the development of medical professionalism across demographics, curriculum phases, and educational backgrounds.

Materials and methods

This cross-sectional study was conducted at the medical faculty of a local university, involving 302 clinical medical students. The study aimed to describe the sociodemographic profile of clinical medical students at the university, measure their level of medical professionalism, and identify factors associated with professionalism scores. The inclusion criteria include actively enrolled clinical medical students at IIUM. Students on long study leave were excluded. The minimum required sample size, based on a 90% confidence interval and a precision of 0.05, considering the prevalence of good medical professionalism among medical students, was 302 students [14]. After accounting for a 10% dropout rate, the final minimum sample size required was 324 students. The study employed universal sampling,

recruiting all medical students from Years 3 to 5 (clinical-phase). Participants were approached in a lecture hall, followed by distribution of the questionnaire via Google Forms. Of the 330 medical students approached, 302 agreed to participate, yielding a response rate of 92%.

The assessment tool used was the validated Learner's Attitude of Medical Professionalism Scale (LAMPS) [15]. This questionnaire was validated in 2021 by Al-Eraky et al., with a Cronbach's alpha of 0.79, confirming acceptable reliability [15]. It consists of 28 items across five significant domains, with details provided in Appendix 1. Approval for its use was obtained from the developer via email.

Sociodemographic data, including previous educational background, parental occupations, and history of attending medical professionalism classes, were recorded. Professionalism scores were collected as continuous data, with a good score defined as exceeding 112 marks, based on the minimum total desired scores for all 28 items. Significant associated factors were analyzed using chi-square and multiple logistic regression. This study received ethical approval from the Kulliyah of Medicine Research Committee (IIUM/305/20/4/1/7) on April 18, 2024.

Results

Demographic data of the respondents

Table 1 summarizes the sociodemographic characteristics of 302 respondents. The mean age was 22.6 years, with a predominantly female population (74.8%). The largest group consisted of third year students (55.3%). Most participants had attended boarding schools (62.3%), with Islamic schools representing the most common educational background (45.5%). Nearly all respondents completed their matriculation outside of Centre for Foundation Studies (CFS) IIUM (96%). Additionally, 88.7% reported having attended medical professionalism classes. Regarding parents' occupations, most came from non-medical backgrounds (85.8%).

Level of medical professionalism

Table 2 shows the descriptive statistics for medical professionalism scores of the medical students. They had scores ranging from a minimum of 83.00 to a maximum of 138.00. The mean score for medical professionalism is 113.0 (SD = 8.00), which falls within a good level of medical professionalism score.

Associated factors for the level of medical professionalism

Table 3 (univariate analysis) and table 4 show the significant variables associated with good medical professionalism score. They are the willingness to do medicine (OR 4.5, CI: 2.37 – 8.49) and previous history of attending Islamic secondary school (OR 1.7, CI: 1.05 – 2.76). Other variables were not statistically significant, as all p-values exceeded the threshold of 0.05.

Discussion

Professionalism has become a core competency for medical students, as inappropriate professional attitudes can adversely affect patient welfare, health outcomes, and physician morale [6]. In our study, 88.7% of students reported attending a medical professionalism class, highlighting their strong commitment to professionalism in education. This reflects a holistic approach by curriculum policymakers in integrating professionalism training to ensure that future physicians are compassionate, competent, and ethical. The overall attitude of respondents towards professionalism was positive, consistent with findings from prior studies [7,9]. A previous study among non-clinical medical students also showed similar positive attitudes toward professionalism [16]. In our study, the range for good professionalism scores was between 112 and 140, with a mean score of 113, indicating a solid understanding of professionalism and ethical principles among the participants. Although female respondents outnumbered males, no significant differences in professionalism scores were observed between genders. These

findings align with previous research, which also reported no gender-based differences in professionalism levels [8,9,17]. The collaborative nature of the medical field may help mitigate gender disparities in professionalism. However, contradictory findings exist; for instance, a Turkish study found higher professionalism scores among females [7]. Such discrepancies suggest that cultural and societal factors influence how professionalism is perceived and practiced. Professional behavior is influenced by individual values, experiences, and the cultural context of medical training [18].

No significant differences in professionalism scores were observed between students across different years of study. Previous research also suggests a lack of association between the year of study and professionalism levels [5,8]. Although Santos et al. noted a decline in certain professional attitudes during clinical years, overall professionalism remained consistent. This finding underscores the need for sustained professionalism training throughout medical education.

Parental occupation did not significantly influence professionalism scores. This finding aligns with a Brazilian study, which reported no correlation between family income and professionalism levels among medical students [5]. These results suggest that socioeconomic factors, such as parental occupation or income, have minimal impact on the development of professionalism. Our study found no significant relationship between the history of attending professionalism classes and professionalism scores. This aligns with the findings by Jahan et al. (2016), which highlighted the absence of formal professionalism training in some curricula [19]. Instead, professionalism is commonly assessed through clinical evaluations and Objective Structured Clinical Examinations (OSCEs). Shakour et al. (2015) similarly noted the lack of reliable instruments for selecting medical students with strong professional qualifications [20]. The variability in content and teaching approaches in professionalism classes

may account for their limited impact on students' professional behaviour.

The most significant factors associated with higher professionalism scores were students' willingness to pursue medicine and a history of attending Islamic schools. Intrinsic motivation, such as a passion for helping others or an interest in science, often aligns with the values underlying medical professionalism. Students who voluntarily choose medicine tend to demonstrate greater professionalism, including altruism, empathy, and ethical behavior [21,22]. Conversely, external pressures—such as family expectations—may reduce adherence to professional values.

Islamic education emphasizes ethical principles such as Amanah (trust) and Ihsan (excellence), which resonate with the values of medical professionalism. Students from Islamic schools often exhibit heightened responsibility, accountability, and respect for human dignity, as these values are integral to Islamic teachings [23,24]. The Islamic curriculum focuses on moral development and integrity through the internalization of ethical principles, preparing students for service-oriented professions like medicine [25]. This may explain the association between Islamic education and enhanced professionalism observed in our study.

The medical professionalism curriculum in medical schools is developed through several platforms. These include: (1) the formal curriculum, which incorporates medical ethics and professionalism courses; (2) experiential learning, gained through clinical clerkships and mentorship by senior doctors; (3) the informal curriculum, shaped by institutional culture and environment; (4) formal assessments, such as Objective Structured Clinical Examinations (OSCEs) and reflective writing; and (5) student-led initiatives and extracurricular activities [6,7,9]. It is expected that students from an Islamic curriculum in secondary school have a greater potential to adapt to these five platforms of the medical professionalism curriculum. This is because Islamic education aligns with the unity of

knowledge and compassionate education, as emphasized in Tawhidic epistemology [23-25]. This alignment may explain the higher odds of achieving a strong professionalism score among students with an Islamic educational background.

Limitation

Our study has some limitations, including being conducted at a single institution, which may limit the generalizability of the findings, and a relatively small sample size, which may affect the robustness of the results. Furthermore, other variables were not included but could serve as significant cofactors, such as academic performance and involvement in extracurricular activities. While we used a validated instrument (LAMPS) to ensure measurement reliability, the self-reported nature of data collection introduces the possibility of response bias. Participants may have provided socially desirable responses rather than accurate self-assessments of their professional behaviours.

Conclusion and recommendations

In conclusion, fostering medical professionalism should begin early, before students enroll in medical school. The Islamic curriculum plays an important role in shaping students' professionalism.

Integrating professionalism training with cultural and individual considerations may further enhance its effectiveness. Future research should focus on refining professionalism curricula and exploring the long-term impact of intrinsic motivation and religious education on professional behaviour. The implementation of medical ethics based on Islamic teachings should be incorporated into the curriculum from the first year of medical school. Additionally, screening prospective students for their willingness to pursue medicine is crucial to producing medical doctors with integrity.

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Authors' Contributions

MSES was responsible for conceptualization, finalizing data analysis, supervising the research, and finalizing the manuscript. AFMF, ASTA, and AAA conducted the research, collected data, and drafted the manuscript.

Conflicts of interest

None

Table 1. Demographic Data of The Respondents

Characteristics	N	%
Age(years) (mean, SD)	22.6	1.2
Gender		
Male	76	25.2
Female	226	74.8
Academic Year		
Year 3	167	55.3
Year 4	84	27.8
Year 5	69	16.9
Secondary school		
Boarding	188	62.3
Non-boarding	144	37.7
Curriculum of secondary school		
Islamic school	145	48.0
Ordinary school	157	52.0
Matriculation		
IIUM matriculation	290	96.0
Others	12	4.0
Parents' Job		
Medical Professionalism	43	14.2
Non-medical Professionalism	259	85.8
Willingness to do Medicine		
Yes	224	74.2
No	78	24.8
Attending medical professionalism workshop		
Yes	268	88.7
No	34	11.3

Table 2. Medical Professionalism Score

Medical Professionalism Score	
Good n (%)	176 (58.3)
Poor n (%)	126 (41.7)
Mean (SD)	113 (<u>±</u> 8)
Minimum	83
Maximum	138

n = number, % = percentage

Table 3. Association between sociodemographic and medical professionalism score (n=302)

Characteristic	Medical Professionalism Score		χ^2	Df	p value
	Good n (%)	Poor n (%)			
Willingness for Medicine					
Yes	111 (63.4)	113 (88.9)	25.073	1	< 0.001
No	64 (36.6)	14 (11.1)			
Secondary School's Curriculum					
Islamic	95 (54.3)	50 (39.4)	6.567	1	0.010
Ordinary	80 (45.7)	77 (60.6)			

n = number, % = percentage, χ^2 = Chi square , Df = degree of freedom

Table 4. Multiple logistic regression analysis of factors associated with good medical professionalism score.

	B	S.E.	Wald	df	Sig.	Exp(B)	95% confidence interval	
							Lower	Upper
Islamic secondary school	0.532	0.246	4.658	1	0.031	1.702	1.050	2.760
Willing Medicine	1.500	0.326	21.182	1	<.001	4.481	2.366	8.487
Constant	-3.806	0.711	28.681	1	<.001	0.022		

Variable(s) entered: Islamic secondary school (curriculum), Willingness to do Medicine.

Exp (B) = Odd ratio, SE = standard error, B = estimated coefficient

References

- [1]. Kim DK. Medical Professionalism in Neoliberalism. *Journal of Korean Medical Science*. 2019;34(18)
- [2]. Wearn A, Wilson H, Hawken SJ, Child S, Mitchell CJ. In search of professionalism: implications for medical education. *N Z Med J*. 2010;123(1314):123-33.
- [3]. Bhardwaj A. Medical professionalism in the provision of clinical care in healthcare organizations. *J Healthc Leadersh*. 2022;14:183-9.
- [4]. Seif-Farshad M, Bazmi S, Amiri F, Fattahi F, Kiani M. Knowledge of medical professionalism in medical students and physicians at Shahid Beheshti University of Medical Sciences and affiliated hospitals—Iran. *Medicine (Baltimore)*. 2016;95(45):e5380.
- [5]. Santos WSD, Laros JA, Trindade EMV, Ribeiro MD, Silva DAMD, Ribeiro LM. Medical professionalism: the effects of sociodemographic diversity and curricular organization on the attitudinal performance of medical students. *Rev Bras Educ Med*. 2017;41:594-603.
- [6]. Selic P, Cerne A, Klemenc-Ketis Z, Petek D, Svab I. Attitudes toward professionalism in medical students and its associations with personal characteristics and values: a national multicentre study from Slovenia raising the question of the need to rethink professionalism. *Adv Med Educ Pract*. 2019;10:437-46.
- [7]. Tanrıverdi EÇ. Professional attitudes of third-year medical students: a cross-sectional study. *Van Tip Derg*. 2022;29(2):47-52.
- [8]. Haque M, Zulkifli Z, Haque SZ, Kamal ZM, Salam A, Bhagat V, et al. Professionalism perspectives among medical students of a novel medical graduate school in Malaysia. *Adv*

Med Educ Pract. 2016;7:407-22.

- [9]. Alfaris E, Irfan F, Alosaimi FD, Shaffi Ahamed S, Ponnampereuma G, Ahmed AM, et al. Does professionalism change with different sociodemographic variables? A survey of Arab medical residents. *Ann Med.* 2022;54(1):2191-203.
- [10]. Alharbi NS, Alassaf AM, AlZamil AR, Alqarni BM, Alzahrani FA, Alsaif FB. Studying the association between knowledge of professionalism and demographic characteristics in King Saud University medical students. *Cureus.* 2023;15(8):e42695.
- [11]. Snider KT, Johnson JC. Professionalism score and academic performance in osteopathic medical students. *J Osteopath Med.* 2014;114(11):850-9.
- [12]. Cruess RL, Cruess SR. Teaching professionalism: general principles. *Med Teach.* 2006;28(3):205-8.
- [13]. Ainsworth MA, Szauter KM. Medical student professionalism: are we measuring the right behaviors? A comparison of professional lapses by students and physicians. *Acad Med.* 2006;81(10 Suppl):S83-6.
- [14]. EwennTan J, Collins A, Tilley R, Upadhyaya M. Medical professionalism among medical students: a multifaceted evaluation. *Int J Sci Res Arch.* 2021;2(2):237-44.
- [15]. Al-Eraky MM, Chandratilake M, Wajid G, Donkers J, van Merrienboer J. Medical professionalism: development and validation of the Arabian LAMPS. *Med Teach.* 2013;35 Suppl 1:S56-62.
- [16]. Khan NF, Saeed M, Majid R. Assessing professionalism among first-year medical students through professionalism assessment tool. *J Univ Coll Med Dent.* 2024;34-7.
- [17]. Kebede S, Gebremeskel B, Yekoye A, Menkalew Z, Asrat M, Medhanyie AA. Medical professionalism: perspectives of medical students and residents at Ayder Comprehensive and Specialized Hospital, Mekelle, Ethiopia—a cross-sectional study. *Adv Med Educ Pract.* 2018;9:611-6.
- [18]. Shi Y, Gao H, Yan Y, Li X, Ping W, Yang H, et al. Career choice motivation and professionalism in medical students in China: a gender-stratified analysis. *BMJ Open.* 2024;14(6):e083073.
- [19]. Jahan F, Siddiqui MA, Al Zadjali NM, Qasim R. Recognition of core elements of medical professionalism among medical students and faculty members. *Oman Med J.* 2016;31(3):196.
- [20]. Shakour M, Badrian M. Assessment of professionalism between medical students in clinical

- situations. *Int J Med Investig.* 2015;4(2):199-207.
- [21]. Robins L, Braddock CH, Fryer-Edwards K, White AA. Professionalism and its discontents: Physician responses to professionalism dilemmas in practice. *Acad Med.* 2020;95(9):1424–32.
- [22]. Finn G, Garner J, Sawdon M. ‘You’re judged all the time!’: Students’ views on professionalism: A multicentre study. *Med Educ.* 2009;43(8):879–87.
- [23]. Aasi GR. The Qur'anic guidance on ethical principles for professionals. Herndon (VA): International Institute of Islamic Thought; 2003.
- [24]. Yusuf M, Ghazali M, Ismail S. Amanah (trust) and Ihsan (excellence) as key components of professionalism in Islam. *J Islamic Med.* 2011;10(1):22–8.
- [25]. Al-Khalil AH. The influence of Islamic education on professional ethics: A comparative study. *J Ethics Educ.* 2020;12(3):45–60.

Appendix 1

Questionnaire Items of LAMPS [15].

Behavioral item within domains “Do you agree when the doctor...?”

Duty/Accountability

1. Admits wrong diagnosis before a patient
2. Leaves before handing over patients to the next colleague on duty
3. Actively participates in orientation for new residents
4. Encourages patients to contribute to decision making
5. Discusses patients' cases with colleagues in a crowded elevator
6. Calls insurance company to follow up a valid patient claim
7. Declines an invitation to an infection control committee meeting

Excellence/Autonomy

1. Reflects on clinical cases to discover his/her unmet learning needs
2. Attends patient's questions to explain their illness in a busy clinic
3. Searches for the best evidence available in patient care
4. Collaborates with colleagues to draft new hospital guidelines
5. Invests part of his/her income on attending medical conferences
6. Makes a deal with a pharma company to sponsor his/her conference

Honor/Integrity

1. Gives wrong information to a patient to protect a colleague
2. Issues a false sick leave for a kid of a friend to study home
3. Changes actual data in his/her research based on supervisor's advice
4. Hides information about fatal diagnosis to avoid patient disturbance
5. Introduces medical students as doctors to patients

Altruism

1. Declines sport club to respond to an emergency call
2. Frequently skips clinical teaching to prepare for a conference
3. Cancels a family appointment for an urgent patient's need
4. Does not witness against employer hospital in favor of a patient before the court
5. Turns down a home visit to a disable patient due to busy clinic

Respect

1. Respects the roles of all members of the healthcare team in the department
2. Considers patient background when explaining their clinical illness
3. Keeps patients waiting in his/her clinic without apology
4. Gives priority to some patients based on social status or nationality
5. Criticizes a prescription written by a colleague in front of patients