SAAP Journal of Integrative Physiology

https://www.thesaap.org/saap-journal

ISSN 3121-410X (Online)

ORIGINAL RESEARCH | SJIP 2026

Professionalism During Preclinical Physiology Course: An Exploration of Perceptions and Experiences of Undergraduates of a Sri Lankan Medical School

Anne Dinithi Anusha Fernando*, Thalawaththage Tharindu Chathurange, Piyusha Milani Atapattu, Sudharshani Wasalathanthri

Department of Physiology, Faculty of Medicine, University of Colombo, Sri Lanka

Abstract

Introduction: Professionalism is a core competency in medical education in curricula of Sri Lankan medical schools. Students are first exposed to aspects of professionalism during preclinical teaching in the Faculty of Medicine, University of Colombo, Sri Lanka. The perceptions of medical undergraduates on inputs of professionalism in the early undergraduate years have not been formally assessed. This study explored medical students' perceptions and experiences in professionalism during the first-year preclinical physiology course, and identified opportunities and obstacles to incorporate professionalism into physiology teaching.

Methods: An exploratory qualitative study was carried out among second year medical students who had finished their first-year physiology course. Data were collected through focus group discussions (FGD). Discussions were audio-recorded and transcribed verbatim with explicit consent. Transcripts were independently evaluated by two investigators. An inductive analytical method was used for thematic analysis.

Results: Twenty-eight students participated in four FGDs. Thirty-two ideas on professionalism were expressed and they were grouped into 13 themes. Participants perceived learning professionalism as beneficial. Heavy workload and stressful learning environment were identified as obstacles to learning professionalism. Suggestions to strengthen teaching professionalism included extending teaching-learning time, using case-based scenarios, and actual patient contact.

Conclusion: Students had reasonable insights into theoretical aspects of professionalism illustrated in globally-accepted models, but had difficulty in linking them with actual practice. Exposure to professionalism during the preclinical physiology course was limited and informal. Professionalism was perceived as an external element that had to be learnt with additional effort and time. Early clinical exposure and case-based learning in small group format could be used to strengthen delivery of inputs on professionalism in the preclinical physiology course.

Keywords: Medical students, perceptions, preclinical physiology course, professionalism, qualitative

1. Introduction

Professionalism is considered a core competency in medical education[1] that should be introduced early in the undergraduate career[2]. Modern medical curricula across the world utilize methodical approaches to teach behaviors and values related to professionalism, traditionally transmitted via informal and hidden curricula, for example, by physicians who served as role models.

The Association of American Medical Colleges (AAMC), the General Medical Council (GMC), UK and the World Health Organization (WHO) recommend and emphasize inclusion of professionalism in core curricula of medical schools and early exposure of medical students to

Address for correspondence:
Prof. Anne Dinithi Anusha Fernando
Department of Physiology, Faculty of Medicine, University of Colombo, 25, Kynsey Road, Colombo - 00800, Sri Lanka
E-mail: dinithif@physiol.cmb.ac.lk

How to cite this article: Fernando ADA, Chathurange TT, Atapattu PM, Wasalathanthri S. Professionalism during preclinical physiology course: An exploration of perceptions and experiences of undergraduates of a Sri Lankan medical school. SAAP J Integr Physiol. 2026;1(2): 2-6.

professionalism[3,4]. Despite a profusion of literature that analyze how best to teach and evaluate professionalism[5], a gap exists between the knowledge created by research and its translation into practice[6].

Preclinical and clinical undergraduate studies on professionalism reporting data on knowledge and perception of professionalism and effective and preferred methods of teaching affirm that preclinical students prefer a problem-based approach and clinical students, a patient-centered approach[7]. Data on effectiveness of teaching concede that these qualities can be taught[8] and teaching increases the awareness of professionalism in both teacher and student[9].

The Sri Lanka Medical Council recommends a core ethics curriculum for local medical schools and emphasizes the need for teaching ethics in accordance with its guidelines[10]. All local state medical faculties teach aspects of professionalism, but there is doubt whether it is adequately addressed in their formal curricula[11]. The inadequacies are possibly more in the pre-clinical stage.

Further, with the introduction of Sri Lanka Qualifications Framework (SLQF) into higher education, the institutes are expected to achieve appropriate standards in attitudes, values, and professionalism[12]. Thus, the responsibility of the preclinical departments to ensure exposure of students to introductory ethics and professionalism has become greater. But the actual inputs by the preclinical departments on these aspects are likely to be variable and have not been assessed formally.

Initial exposure of students to aspects of professionalism related to patient-care is expected during the preclinical physiology course, mainly during practical sessions. Other aspects of professionalism, such as leadership and communication skills are likely to be introduced during small group discussions. These aspects are not formally and methodically focused on during the course, leading to uneven utilization of opportunities or even loss of opportunity to introduce professionalism during the early undergraduate medical career.

The objectives of this study were to evaluate medical students' perceptions and experiences in professionalism and to identify opportunities and obstacles to incorporate professionalism in the early years. The authors utilized their learning experiences in the first-year physiology course and the first clinical rotation to evaluate their perceptions on the subject.

2. Methods

A qualitative study was conducted through focus group discussions (FGD), to explore student perceptions on professionalism[13]. Thirty-two participants were selected and invited from 200 second year students by recruiting every fifth person in the student registry until the sample size was achieved. Second year students were selected, as they had recently completed the physiology course in the pre-clinical year, and had been exposed to all its teaching activities. Twenty-eight students accepted the invitation and participated. Four FGDs were conducted, which is an adequate number when looking for patterns and themes[13].

Data were collected during the FGDs, which is a widely-used method for evaluation of group norms and values in healthcare[14], and perceptions on professionalism[15]. A detailed script of the discussion was prepared. Nine open-ended questions were designed based on literature[16] and investigators' own experience, to obtain information (Table 1).

A senior investigator trained in qualitative research moderated the discussions while two other investigators assumed roles of observer and scribe. After introductions, the moderator informed the student groups about the purpose and the methodology of the study. Informed written consent was obtained from those who agreed to participate, to audio-record discussions, and to use anonymized quotes in publications. Ethical clearance was obtained from the Ethics Review Committee of the Faculty of Medicine, University of Colombo (Protocol No. EC-16-103).

Open ended, semi-structured questions were posed and ideas were collected within the group until the saturation point was reached. The discussions were held in English but students were invited to choose the language they were most conversant in. Three students expressed their thoughts in Sinhala, and none in Tamil. A Tamil interpreter was available.

Audio-recorded interviews containing qualitative data were transcribed verbatim by the investigator who took on the role of the scribe. Transcripts were independently evaluated by two investigators to ensure investigator triangulation in order to provide multiple observations and conclusions, confirming findings and perspectives and adding breadth to the subject being studied[17]. Interpretative phenomenological analysis, an inductive method of analysis on finding out how people make sense of their experience[18] was used to identify emerging perceptions in this purposively selected sample. The ideas and perceptions were subsequently coded and grouped into different themes.

Table 1: Semi-structured questions for students

	Questions
1	What do you understand by the term "medical professionalism?"
2	What are the aspects of professionalism you experienced in the first-year physiology course? Can you give an example/s?
3	In what physiology teaching-learning activities did you experience professionalism?
4	If you were to select one activity, in what single activity did you experience it most?
5	What are the aspects of professionalism that you have observed during your clinical rotation?
6	From your observations in your clinical rotation and the physiology course, can you make suggestions to improve learning professionalism in the first year?
7	What are the benefits of learning professionalism?
8	Are there any obstacles to learning professionalism in the first year? What are they?
9	What else do you have to say about this topic?

3. Results

Out of 32 students invited, 14 male students and 14 female students (total=28) participated. They were between 21-23 years of age. After completion of basic biomedical sciences, they have had four weeks of clinical rotations.

Data obtained are described in two main sections, i.e., students' perceptions and their suggestions to strengthen inputs on professionalism in the early years.

3.1. Student perceptions

3.1.1. Understanding of the term 'professionalism'

Students expressed 32 ideas as components of professionalism. They were coded and grouped into 13 themes (Figure 1).

Theme 1: Adhering to ethical principles

Many students recognized that adhering to the principles of medical ethics, (e.g., obtaining consent, ensuring privacy, non-discrimination) as dimensions in medical professionalism.

"In this career we should know what ethical principles are …."

"We have to get consent before we do a procedure…."

"…. ensuring that the quality of care we are providing is maintained regardless of whom we are treating"

Theme 2: Responsibility

One student said that since medical profession is concerned with lives of people, doctors should work with responsibility. (This statement was translated to English from Sinhala)

Theme 3: Competency

Most students identified components of competency, (e.g., knowledge and skills), as aspects of professionalism.

"Professionalism is about achieving high standards in knowledge and

skills"
"…. capacity to gather knowledge and ability to perform adequately to uplift the health status of society…."

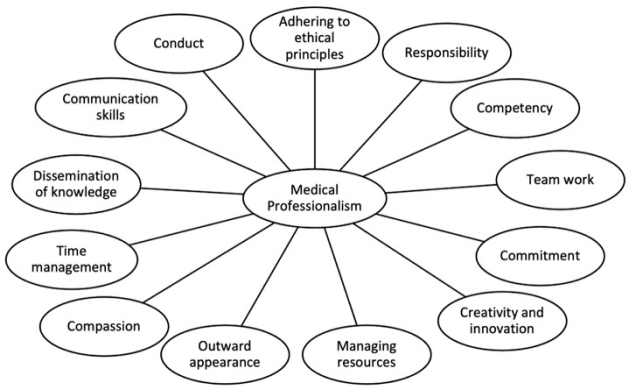

Figure 1: Graphic representation of the thematic analysis

Theme 4: Team work
Some said that working as a team should be included in professionalism. *"Relationship between medical students, doctors and nurses is important when working as a team"*
Theme 5: Communication skills
Good communication skills were viewed as essential. *"The way we are communicating with colleagues and patients is important…."*
Theme 6: Dissemination of knowledge
Teaching medical students and other staff members and providing health advice to the society were considered to be a component in medical professionalism. *"Some doctors teach us well…. I think teaching has to be included"*
Theme 7: Time management
Managing time and being punctual were identified as important. *"Time management is important and…. you should not get late"*
Theme 8: Compassion
Compassion was viewed as an essential part. *"We have to work with competence, compassion, and punctuality…." "Because we are dealing with human beings in our profession, kindness is required…."*
Theme 9: Outward appearance
Students observed that following an appropriate dress code is a requirement. *"Doctors should have a proper dress code"*
Theme 10: Managing resources
Cost-effectiveness in managing patients and making maximum use of available resources were identified as aspects of professionalism. *"How to manage resources we have, and get their full use…."*
Theme 11: Creativity and innovation
Students expressed that creativity is a quality in a good professional. *"…. personally, I think those who are in the medical field have more creativity. They are innovative…."*
Theme 12: Commitment
Commitment was identified as a part of medical professionalism. *"…. sometimes we have to keep our private life aside and commit ourselves...."*
Theme 13: Conduct
Students expressed that their behavior in front of the patients and staff reflect their professional qualities. *"It is our conduct with social, physical and personality components"*

3.1.2. Experiences on professionalism

During the physiology course
Students had observed aspects of professionalism during physiology lectures, small group discussions (SGD), practicals, and audio-visual lessons. Nineteen students thought that SGDs gave them the highest exposure to professionalism. Inputs on medical ethics, competency, communication skills, creativity, time management, punctuality, and dress code were experienced.
"Teachers expected us to be punctual. If we were one minute late, the door was closed"
"In SGD…. when we can't find answers, we refer to internet, discuss among ourselves and from that we develop our team work, discussion skills and also it develops our updating skills"
"During fundoscopy they (teachers) told how to begin and how to get consent of the patient"
"At practicals we were taught how to do things with minimum mistakes"
"They asked us to dress properly"
During clinical rotation
Students had observed aspects such as compassion, competency and team work by doctors and other medical staff.
"The competency and commitment that they have (consultant), was amazing"
"We learn how to apply our knowledge in clinical setting"
"How to work as a staff member with nurses…."
"Talking to patients with kindness…."

3.1.3. Perceived benefits of practicing professionalism

Students indicated that being professional is beneficial for individuals and the entire medical profession. The benefits included gaining more trust and support from the patients, improving humanistic qualities, learning better during the clinical appointments, developing confidence, having less trouble in the ward, providing better quality patient-care, having a placebo effect on patients, gaining respect from patients and colleagues and creating a positive image among the public.
"It will give us confidence...."
"Very easy to communicate with patients in the wards, get the support of the patient when examining …."
"We will be identified as nice doctors…. sometimes there can be a placebo effect…. without giving medicine he (patient) may improve"
"Currently we don't have a good image among the public…."

3.1.4. Obstacles to learning professionalism

Students voiced they had a vast curriculum during the first year and therefore did not have time to concentrate on learning and incorporating professional qualities to their life. The stressful environment in the first year had made some students selfish and competitive, which negatively affected learning professionalism.
"We came to faculty by competing with others, once we are here, we tend to compete and with that huge amount of knowledge we have to gather…. empathy that's there for others will reduce with that stress"
"We have to do it within the term time, impossible…."

3.2. Suggestions to strengthen teaching professionalism

The majority suggested incorporating case-based scenarios addressing professionalism into physiology teaching. *"During physiology SGD there is usually a case history…. like a patient presented, if actual patients are presented, I think it is better". "In the lectures we were taught theory part. If it is related to patients, it will be useful"*
Seeing actual patients in the clinical setting and at least one or two hospital visits during first year was suggested to strengthen professionalism. *"During the first year we learn inside the faculty and we don't get much clinical exposure…., at least once or twice if we can go to a ward and observe what's really done there, then we will get a better idea about professionalism"*
Practicals were perceived as a place of learning aspects of professionalism, such as patient communication (e.g., obtaining consent). *"In the practicals.... if you can stress the first part that we have to get consent from the patient...."*
Giving every student a chance to participate in hands-on sessions during practicals and handle instruments, were seen as important to improve skills and confidence. They suggested having smaller groups and more equipment, especially those that are frequently used. *"…. and also, it's better to give more chances for every student to practice those instruments and methods during practicals"*
Students thought that there should be more time for teaching activities,

especially practicals, to focus on aspects of professionalism. Emphasis was placed on not increasing the duration of a single session but to repeat the same activity. *"…. if we get two or more sessions, I think it'd be good"*

One student said that lecturers can insert a sentence on professionalism to the final slide of their presentation. *"…. At the end of each presentation, add a statement, like for example, do not insult your patients"*

4. Discussion

In this preliminary exploratory qualitative study, we examined in depth, how students perceived aspects of professionalism during a preclinical curriculum. There was clear recognition of core elements of professionalism defined in widely accepted models[19], for example, adhering to high ethical and moral standards, placing the interests of patients above those of the physician, setting and maintaining standards of competence, providing expert advice to society on health, keeping knowledge and skills up-to-date, and fostering good relationships with patients and colleagues. Some students struggled to articulate their perceptions, but everyone expressed their opinions. Consistent with findings from Australia[20], most attributes they identified could be grouped into domains that are concerned with a high level of intellectual and technical expertise and commitment to service. In addition to the standard attributes, they identified creativity and innovativeness as aspects of professionalism, perceptions unique to this study. None spoke of autonomy in practice, reflecting on their own actions and decisions, working within the law and self-regulation of the profession[19]. One probable reason for this is that the participants were still early in their clinical career and they had not been exposed to these aspects.

Students had observed aspects of professionalism, such as competency, punctuality, communication skills, obtaining consent and adopting a dress code during physiology teaching-learning activities. However, the exposure was suboptimal and inconsistent. The SGDs were viewed as the activity where they experienced aspects of professionalism most, as did preclinical students at the University of Washington[21]. This was an unexpected finding to the investigators, because it is mostly during practicals that lecturers introduce aspects of professionalism to the students. They had experienced professionalism during their clinical rotation, but linking the experiences with those in the preclinical year was weak.

Analysis of perceived benefits of learning professionalism yielded interesting results not reported before. Students seemed to expect a 'give and take' relationship with the patient, suggesting 'being nice' will help obtaining more information about the disease. Local cultural nuances were recognized in comments, for example, 'nice doctor having a placebo effect, curing the patient'. Students were conscious about the decaying image of doctors in the eyes of the public, and suggested that being professional will help restoring that.

Heavy workload and inadequate learning time in the first year were the most frequently identified barriers to learning professionalism, reasons not reported previously. These findings suggest that our students view professionalism as an external construct that needs to be learnt with extra effort and time that may interfere with learning of biomedical sciences, rather than a set of attributes that should extemporaneously integrate into their professional life. Our students did not identify attitudes and behaviors by others that contradicted the moral values conveyed by the curriculum as barriers[22].

Of the diverse methods used to teach professionalism, traditional methods such as tutorials have shown lack of engagement by students and teachers[23], whereas innovative methods such as video clips[24], and literature-based interventions[8] have shown encouraging results. In order to strengthen inputs on professionalism in the first year, our students wanted more learning time, more case-based learning activities and a few visits to hospital in the first year. Case-based scenarios were a strong recommendation in previous studies[7], as was early patient contact[2]. Role modeling, which was identified as a key method by a host of other studies[2,7,24], did not emerge during our discussions. Creation of special awards for staff and students for practicing professionalism or effective evaluation[7] were not offered as suggestions.

5. Limitations of the Study

We acknowledge some limitations. Language barriers may have prevented articulation of ideas though steps were taken to minimize that. Critical perceptions may not have been voiced since the investigators were their own teachers. Students may have lacked maturity to offer options to strengthen professionalism, therefore, lists describing professional and unprofessional behaviors[25] could have been used. Asking them to identify instances of lack of professionalism they experienced would have enriched our findings.

6. Conclusion

Results of this study have curricular implications that can be extended to suggest ways to optimize teaching of professionalism in the preclinical years. Students had reasonable insights into theoretical aspects of professionalism that matched the globally accepted models. Exposure to professionalism during the preclinical physiology course was limited and informal. Learning professionalism was viewed as beneficial. Main obstacles against strengthening of professionalism in the preclinical years were the heavy workload and lack of learning time. Suggestions to strengthen teaching professionalism included extending term time, using case-based scenarios and a patient contact in the first year. Innovative methods to teach professionalism in the local setting and factors outside the curriculum that influence professional development are worth exploring.

Acknowledgments

The authors wish to thank all medical students who participated in the study.

Funding

No funding was received to conduct the study.

Conflict of Interest

PMA is on the Advisory Board of the SAAP Journal of Integrative Physiology.

Disclosure of AI Use

No AI tools were used for preparation of the manuscript.

Authors' Contributions

All four authors made substantial contributions to the study conception and design. Data collection and recording was done by TTC. Analysis and interpretation of data was done by all four authors. ADAF made the highest contribution by also drafting the article. PMA and SW reviewed and revised the article. All authors approved the final manuscript for submission and agreed to be accountable for all aspects of the work.

References

1. Stephenson A, Higgs R, Sugarman J. Teaching professional development in medical schools. Lancet. 2001;357(9259):867-70. DOI: 10.1016/S0140-6736(00)04201-X.
2. Goldie J, Dowie AI, Cotton P, Morrison J. Teaching professionalism in the early years of a medical curriculum: a qualitative study. Med Educ. 2007;41(6):610-7. DOI: 10.1111/j.1365-2923.2007.02772.x.
3. The Medical School Objectives Writing Group. Learning objectives for medical student education: guidelines for medical schools. Report I of the Medical School Objectives Project. Acad

Med. 1999;74(1):13-8. DOI: 10.1097/00001888-199901000-00010.

4. General Medical Council. Tomorrow's doctors: outcomes and standards for undergraduate medical education. London: General Medical Council; 2009. Available from: https://www.ehu.eus/SEMDE/archivos_pdf/TomorrowsDoctors_2009.pdf. Accessed on 03.06.2026.
5. Birden H, Glass N, Wilson I, Harrison M, Usherwood T, Nass D. Teaching professionalism in medical education: a Best Evidence Medical Education (BEME) systematic review. BEME Guide No. 25. Med Teach. 2013;35(7):e1252-66. DOI: 10.3109/0142159X.2013.789132.
6. Bryden P, Ginsburg S, Kurabi B, Ahmed N. Professing professionalism: are we our own worst enemy? Faculty members' experiences of teaching and evaluating professionalism in medical education at one school. Acad Med. 2010;85(6):1025-34. DOI: 10.1097/ACM.0b013e3181ce64ae.
7. Byszewski A, Hendelman W, McGuinty C, Moineau G. Wanted: role models – medical students' perceptions of professionalism. BMC Med Educ. 2012;12:115. DOI: 10.1186/1472-6920-12-115.
8. Shapiro J, Morrison E, Boker J. Teaching empathy to first year medical students: evaluation of an elective literature and medicine course. Educ Health (Abingdon). 2004;17(1):73-84. DOI: 10.1080/1357628031000165619 6.
9. Goldie J. Review of ethics curricula in undergraduate medical education. Med Educ. 2000;34(2):108-19. DOI: 10.1046/j.1365-2923.2000.00607.x.
10. Nonis NJ, Herath HMSSD. Annual Report. Colombo: Sri Lanka Medical Council, 2010.
11. Kommalage M. Hidden and informal curricula in medical schools: impact on the medical profession in Sri Lanka. Ceylon Med J. 2011;56(1):29-30. DOI: 10.4038/cmj.v56i1.1893.
12. University Grants Commission Sri Lanka. Sri Lanka qualifications framework (SLQF). Updated version. Colombo: University Grants Commission, September 2015. p. 13-15. Available from: https://www.ugc.ac.lk/attachments/1156_SLQF_2016_en.pdf. Accessed on 03.06.2026.
13. Stalmeijer RE, McNaughton N, van Mook WNKA. Using focus groups in medical education research: AMEE Guide No. 91. Med Teach. 2014;36(11):923-39. DOI: 10.3109/0142159X.2014.917165.
14. Kitzinger J. Qualitative research. Introducing focus groups. BMJ. 1995;311(7000):299-302. DOI: 10.1136/bmj.311.7000.299.
15. Finn G, Garner J, Sawdon M. 'You're judged all the time!' Students' views on professionalism: a multicentre study. Med Educ. 2010;44(8):814-25. DOI: 10.1111/j.1365-2923.2010.03743.x.
16. Klemenc-Ketis Z, Vrecko H. The perceptions of professionalism by 1st and 5th grade medical students. Acta Inform Med. 2014;22(5):292-6. DOI: 10.5455/aim.2014.22.292-296.
17. Archibald MM. Investigator triangulation: a collaborative strategy with potential for mixed methods research. J Mix Methods Res. 2016;10(3):228-50. DOI: 10.1177/1558689815570092.
18. Larkin M, Thompson AR. Interpretative phenomenological analysis. In: Harper D, Thompson AR, editors. Qualitative research methods in mental health and psychotherapy: a guide for students and practitioners. Oxford: John Wiley & Sons; 2012. p. 99-116. DOI: 10.1002/9781119973249.
19. General Medical Council. The professional standards. London: General Medical Council. Available from: https://www.gmc-uk.org/professional-standards/the-professional-standards; Accessed on 04.06.2026.
20. Cuesta-Briand B, Auret K, Johnson P, Playford D. 'A world of difference': a qualitative study of medical students' views on professionalism and the 'good doctor'. BMC Med Educ. 2014;14:77. DOI: 10.1186/1472-6920-14-77.
21. Baernstein A, Oelschlager AA, Chang TA, Wenrich MD. Learning professionalism: perspectives of preclinical medical students. Acad Med. 2009;84(5):574-81. DOI: 10.1097/ACM.0b013e31819f5f60.
22. Hafferty FW, Franks R. The hidden curriculum, ethics teaching, and the structure of medical education. Acad Med. 1994;69(11):861-71. DOI: 10.1097/00001888-199411000-00001.
23. Stockley AJ, Forbes K. Medical professionalism in the formal curriculum: 5th year medical students' experiences. BMC Med Educ. 2014;14:259. DOI: 10.1186/s12909-014-0259-0.
24. Shevell AH, Thomas A, Fuks A. Teaching professionalism to first year medical students using video clips. Med Teach. 2015;37(10):935-42. DOI: 10.3109/0142159X.2014.970620.
25. Humphrey HJ, Smith K, Reddy S, Scott D, Madara JL, Arora VM. Promoting an environment of professionalism: the University of Chicago "Roadmap". Acad Med. 2007;82(11):1098-107. DOI: 10.1097/01.ACM.0000285344.10311.a8.