# Professionalism in medical students at a private medical college in Karachi, Pakistan

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## Abstract

**Objective:** To determine levels of professionalism in undergraduate medical students at a private medical college and assess how changes emerge during their training.

**Methods:** The study was conducted at Aga Khan University, a tertiary care teaching hospital, during November and December 2011. Freshmen, Year 3 and Year 5 students were requested to fill out a questionnaire. It was designed to assess the participants' levels of professionalism and how they perceived the professional environment around them by incorporating previously described scales. The questionnaire was re-validated on a random sample of practising clinicians at the same hospital. SPSS 17 was used for statistical analysis.

**Results:** The study sample comprised 204 participants. The mean score for level of individual professionalism was 7.72±3.43. Only 13 (6.4%) students had a score one standard deviation above the faculty mean. About 24 (11.8%) were one standard deviation and 35 (17.2%) were 2 standard deviations below the faculty mean. The remaining 130 (63.7%) were >2 standard deviations below the faculty mean. Considering the level of education, the mean score for level of professionalism was 8.00±3.39 for freshmen, 6.85±3.41 for year 3 students, and 8.40±3.34 for year 5 students.

**Conclusion:** The currently employed teaching practices inculcating the values of professionalism in medical students are serving as a buffer to maintain the pre-training levels of professionalism from declining.

**Keywords:** Professionalism, Medical students, Undergraduate medical education, Patterns of professionalism. (JPMA 63: 935; 2013)

## Introduction

The American College of Physicians and the European Federation of Internal Medicine has defined professionalism by three basic principles: patient welfare, patient autonomy, and social justice.[1] However, defining an abstract and relative term like professionalism is not a simple task. Various attributes of professionalism in medicine have been identified, including high ethical and moral standards, core humanistic values, role-modelling, scrutiny of behaviour, professional identity, a continuing commitment to excellence and scholarship, leniency and sacrifice.[2,3]

During training, medical students undergo both personal and professional development. Perceptions, in particular to required traits, are associated with the profession change, and influenced by experiences at their respective institutions. A recent study found that medical students thought that society in general had difficulty differentiating between them as individuals and professionals. Participants felt that they were always being viewed with high expectations of professionalism at all times from their choice in clothing to their online activities.[2] No other profession has a greater influence on personal lives of those involved. With the advent of the internet and social networking websites, students have to be careful and demonstrate professionalism in their online lives too.[4,5]

With recent emphasis of medical institutions in inculcating professionalism and influencing certain character traits and behavioural attributes into medical students, it is of interest to see the change in the level of professionalism as students progress along their medical training and the trends of how they perceive the professional environment around them. The current study aimed at quantitatively assessing the levels of

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professionalism in undergraduate medical students at a private medical college as they progressed in their academic careers, and to assess how they perceived the professional environment around them in terms of attributes such as professional excellence, integrity and altruism. Also, it considered analysing these trends in terms of gender, and measuring its impact on professionalism in medical students.

## Subjects and Methods

The observational study was conducted at the Aga Khan University, Karachi, after clearance from the institutional ethical review committee. Freshmen, Year 3 and Year 5 students enrolled at the university were approached in the months of November and December 2011, and consenting participants were requested to fill out a questionnaire. Only students from these three classes were included. The questionnaires were filled in the presence of the investigators. However, they were instructed not to interact or offer explanations regarding the items on the questionnaire. Since the number of medical students enrolled in Years 1, 3 and 5 was approximately 285, a convenient sample of 204 was considered.

In order to quantify an abstract trait like professionalism, a questionnaire suited for medical students was designed by combining previously validated questionnaires, including The American Board of Internal Medicine (ABIM) scale to measure professional attitudes and behaviours in medical education,[6] Barry's challenges to professionalism questionnaire,[7] and the national survey on medical professionalism (NSOMP) questionnaire.[8]

The Barry questionnaire, a cognitive test addressing contemporary professionalism issues, was based on six scenarios where participants must select a best response to a specific scenario. Various attributes of medical ethics and professionalism of the individual participant were assessed using this method to see if it was sensitive to different levels of experience. An overall picture of the educational environment was obtained using the ABIM Scale whose major advantage was to address sensitive issues such as deception on a macro level. It involved a series of 12 statements wherein the participant may report on the behaviour of their peers.

The questionnaire was later modified as per the suggestions of the ethical review committee. Some scenarios from Barry's questionnaire and the NSOMP were removed as the committee felt that they were culturally inappropriate. The modified questionnaire consisted of a series of 12 statements incorporated from the ABIM scale where the participants reported on their peers and how they perceived the professional environment around them on a Likert type 10-point scale (0 being 'never' and 9 being 'always') and 5 scenario-based questions incorporated from the questionnaire proposed by Barry and the NSOMP which judged their individual levels of professionalism.

The correct and acceptable responses were already defined by the two scales. Two points were awarded for each acceptable response and four for each correct response. The cumulative score was used to gauge an individual's level of professionalism on a 20-point scale. Since the construct of professionalism has strong cultural components, and the scales used were not previously used in our setting, we piloted the first section by administering it to 25 randomly selected physicians practising at the university hospital. The physicians were selected by a randomisation of the physician directory. The mean score for practising clinicians was 13.6 ± 2.24. We considered the mean score of the clinicians and one standard deviation (SD) above it as a good score. One SD below the mean was considered adequate.

The second section, based on 12 statements as to how the respondents perceived the professional environment around them, was graded as a mean of the ratings provided by the respondents. These questions were grouped together into three basic attributes: professional excellence (Questions 1-5); integrity (Questions 6-9) and altruism (Questions 10-12).

Data was coded and entered in EpiData 3.1 and transferred to SPSS 17.0 for statistical analysis. In descriptive analysis, means with standard deviation of the continuous variables and percentages of the categorical variables were computed. New variables were created by grouping the acquired data into their respective attributes i.e. professional excellence, integrity and altruism. Gender and class comparisons were made in inferential analysis. Inferential analyses were conducted by using Student's t test or one-way analysis of variance (ANOVA) where appropriate. A p-value of $<0.05$ was considered statistically significant.

## Results

A total of 204 participants were interviewed. The mean age was 20.56±1.92 years. There were 107 (52.4 %) males and 97(47.5%) females, which is approximately equal to the gender distribution in the student body. Nearly, 81 (39.7%) participants were freshmen, while 68 (33.3%) were Year 3 students and 55 (27%) were Year 5 students. When considering future career goals, 93 (45.5%) participants were inclined towards general medicine or surgery, whereas 52 (25.5%) opted for a sub-specialty and 59 (28.9%) were undecided about their future vocation.

Table-1: Responses of the students on individual components of the scenario-based questions assessing individual professionalism.

| Theme | Correct | | | | Appropriate | | | | Incorrect | | | | Significance* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total % (n) | Yr 1% (n) | Yr 3% (n) | Yr 5% (n) | Total% (n) | Yr 1% (n) | Yr 3% (n) | Yr 5% (n) | Total % (n) | Yr 1% (n) | Yr 3% (n) | Yr 5% (n) | |
| Pharmaceutical gifts a | 18.2 (37) | 27.5 (22) | 11.8 (8) | 12.7 (7) | 28.1 (57) | 23.8 (19) | 23.5 (16) | 40.0 (22) | 53.7 (109) | 47.3 (26) | 64.7 (44) | 47.3 (26) | 0.015 |
| Honesty in Documentation b | 50.0 (101) | 55.7 (44) | 41.2 (28) | 52.7 (29) | 9.9 (20) | 6.3 (5) | 13.2 (9) | 10.9 (6) | 40.1 (81) | 38.0 (30) | 45.6 (31) | 36.4 (20) | 0.369 |
| Conflict of interest | 32.8 (67) | 30.4 (24) | 27.3 (18) | 45.5 (25) | 3.5 (7) | 6.3 (5) | 3.0 (2) | 0 (0) | 63.0 (126) | 63.3 (50) | 69.7 (46) | 54.5 (30) | 0.084 |
| Harassment d | 6.5 (13) | 11.3 (9) | 4.5(3) | 1.8 (1) | 37.8 (76) | 30.0 (24) | 47.0 (31) | 38.2 (21) | 55.7 (112) | 58.8 (47) | 48.5 (32) | 60.0 (33) | 0.068 |
| Unnecessary investigations b | 19.3 (39) | 16.3 (13) | 11.9 (8) | 32.7 (18) | 54.5 (110) | 53.8 (43) | 67.2 (45) | 40.0 (22) | 26.2 (53) | 30.0 (24) | 20.9 (14) | 27.3 (15) | 0.013 |

an=203, bn=202, cn=200, dn=201.
*Pearson's chi-square comparing Year 1, Year 3, and Year 5 students.

Table-2: Summary of the ratings assigned to individual attributes of the educational environment by the students.

| Theme | Grade wise | | | | Overall |
|---|---|---|---|---|---|
| | Year 1 | Year 3 | Year 5 | p-value | |
| Professional excellence | 5.28 ± 1.48 | 5.86 ± 1.41 | 6.13 ± 1.25 | 0.002 | 5.70 ± 1.43 |
| Integrity | 6.95 ± 1.89 | 7.28 ± 1.78 | 7.05 ± 1.49 | 0.503 | 7.09 ± 1.74 |
| Altruism | 6.82 ± 1.99 | 6.26 ± 1.69 | 6.23 ± 1.45 | 0.080 | 6.48 ± 1.77 |

The mean score for level of professionalism among students was 7.72±3.43 out of a maximum score of 20. Only 13 (6.4%) of the students had a score one SD above the faculty mean, of which 3 (1.5%) were 2 SDs above the faculty. About 24 (11.8%) were one SD and 35 (17.2%) were 2 SDs below the faculty mean. The remaining 130 (63.7%) were >2 SDs below the faculty mean (Figure-1).

Level of professionalism among male and female respondents yielded similar means of 7.78±3.22 and 7.80±3.52 respectively. Considering the level of education, the mean score for level of professionalism was 8.00±3.39 for freshmen, 6.85±3.41 for Year 3 students and 8.40±3.34 for Year 5 students (Figure-2; Table-1). Analysis of variance between groups showed that students of different medical classes had a significant difference in professionalism (p<0.029). Further, a larger proportion of Year 5 students (9.1%; n=5) achieved good levels of professionalism compared to Year 3 (4.4%; n=3) and Year 1 (6.3%; n=5). This, however, was not statistically significant (p<0.572).

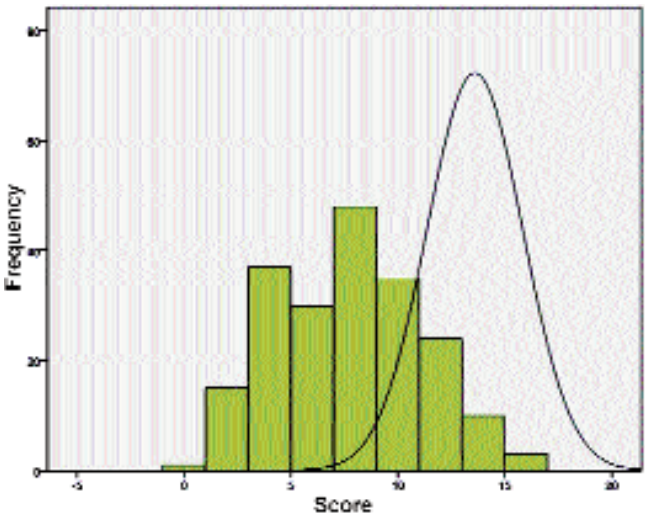


**Figure-1:** Distribution of student scores along the normal curve for the pilot score distribution (Mean 13.6±2.24).

The percentage of correct and acceptable responses to the individual scenarios were as follows: unnecessary investigations 149 (73.8%) (correct= 19.3%, n=39; acceptable= 54.5%, n=110); honesty in documentation 121 (59.9%) (correct= 50%, n=101; acceptable= 9.9%, n=20); gifts from pharmaceuticals 94 (46.3%) (correct= 18.2%, n=37; acceptable= 28.1%, n=57); harassment 89 (44.3%) (correct= 6.5%, n=13; acceptable= 37.8%, n=76); conflict of interest 74 (37%) (correct= 33.5%, n=67; acceptable= 3.5%, n=7).

While considering how the students perceived the general educational environment of the university, the perceptions were divided into 3 general attributes: professional excellence, integrity and altruism. Mean scores for attributes were calculated. A higher score was associated with better professionalism. Mean ratings for professional excellence, integrity and altruism were 5.70±1.43, 7.09±1.74 and 6.48±1.77 respectively (Table-2).

Comparing the two genders yielded similar mean scores with no statistical differences in any of the outlined attributes. Considering the level of medical education,

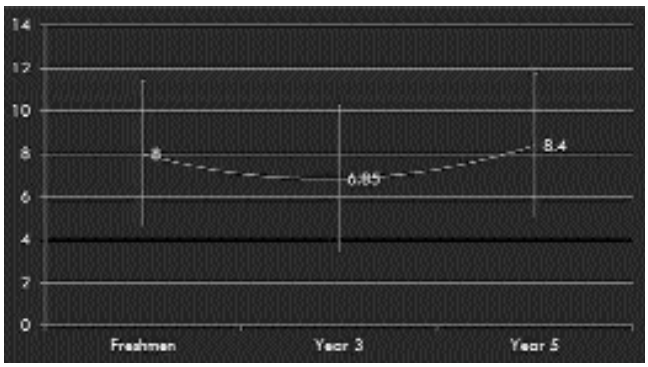


**Figure-2:** Pattern of professionalism seen across levels of medical education.

mean scores for professional excellence, integrity and altruism were 5.28±1.48, 6.95±1.89 and 6.82±1.99 respectively for Freshmen; 5.86±1.41, 7.28±1.78 and 6.26±1.69 respectively for Year 3 students; and 6.13±1.25, 7.05±1.49 and 6.23±1.45 respectively for Year 5 students. Analysis of variance between the groups showed a significant difference in the perception of professional excellence across levels of medical education ($p<0.002$). However, no significant differences were noted in integrity ($p<0.503$) and altruism ($p<0.080$) for different levels of medical education. When comparing professional excellence across individual classes, students of Year 5 had significantly higher scores compared to Year 3 ($p<0.002$). Similarly, Year 3 had significantly higher scores compared with Year 1 ($p<0.035$). While individual comparison of professional excellence yielded valuable statistics, this was not seen for integrity and altruism.

## Discussion

Professionalism is usually described as attributes of professional excellence, integrity and altruism.[1,9-12] These traits are broadly conceptualised with the help of themes; professional excellence is associated mostly with 'education practices', whereas integrity is classified under conceptualisation of 'honesty and righteousness' with colleagues, medical faculty as well as patients, while altruism covers the concepts of 'selflessness'. This study set out to assess professionalism based on all three traits and establish a timeline elaborating changes in certain attributes over the course of medical experience, from Freshmen to Year 3 and Year 5 students.

It was assumed that these attributes of professionalism develop over time and are inculcated at all levels of medical training. However, recent literature seems to point in the other direction, reflecting an inverse relation between professional values, such as altruism and social mindedness, and the level of medical education. A study found that vicarious empathy significantly decreased during the course of undergraduate medical education. This decline was seen especially after Years 1 and 3 of medical education.[13] When evaluating students' perceptions on their ethical and moral behaviour, Feudtner et al found that 62% of medical students believed that during the course of their clerkship their ethical principles had been eroded.[14] The scope of this extends beyond empathy and moral fibre, which may be affected by repeated exposure and desensitisation to such scenarios.[15] While considering academic and professional practices of medical students, studies reported a disturbingly high prevalence of academic dishonesty from giving proxies for attendance to copying during exams and influencing their teachers by unfair means to attain higher grades.[16] Keeping this scenario in mind, the Accreditation Council for Graduate Medical Education (ACGME) has recently advocated the inclusion of professionalism in teaching and assessment of trainees.[1]

Our study also failed to demonstrate adequate levels of professionalism in medical students on an individual basis across all levels, with a mean score for level of professionalism of 7.72±3.43; only 13 (6.4%) of students had a good score. Furthermore, the distribution of this mean exhibited a dip in the level of professionalism from 8.00±3.39 in Freshmen to 6.85±3.41 for Year 3 students. This decline in professionalism was expected from our review of literature. However, this difference stood corrected by Year 5 to a mean score of 8.40±3.34.

Our data incidentally comes from the highest academically ranked medical school in the region, where training in professionalism is given importance. As per the ACGME guidelines, our curriculum offers mandatory systematic sessions in communication skills and professional attitudes to all its undergraduate students. This could possibly explain the recovery seen in the level of professionalism by Year 5. This recovery, however, did not serve to surpass the baseline level of professionalism the freshmen came in with, but rather acted as a buffer to maintain the initial level of professionalism. If this buffering mechanism had not been in place, the level of professionalism among medical students may have seen a gradual decline as reported in literature.

A recent systematic review of 11 studies on medical students found a significant decrease in empathy during medical school in 10, whereas stable scores were found in one study. The decline was attributed to clinical clerkships and the distress produced by "hidden", "formal", and "informal" curricula. However, the decline in our study was noted at the very beginning of Year 3 when the students were 2 months into their clinical clerkships after having completed 2 years of Basic Sciences training when

compared to the freshmen receiving 2 months of Basic Sciences training. It may be postulated that either the initial naive experiences in clinical clerkships or the competitive nature of medical training during the hectic Basic Science years influenced the decline.

It was interesting to note that while their individual levels of professionalism fluctuated during the course of their medical training, their perceptions of their environment showed a different trend. Students perceived a trend of increasing professional excellence in the environment of their class with increasing medical education. This trait can be attributed to the improvement of educational practices over the course of medical school. A similar trend could be seen in terms of honour, but it was not statistically significant. Though not significant, a small decline in altruism was noted across the years. This trend of decreasing altruism appears worrisome.

This was a cross-sectional study and has all the limitations inherent in such a study design.

## Conclusion

Levels of professionalism in graduating medical students appear to be far below the optimum. Given that there was not a great deal of improvement in professionalism over the span of 5 years of medical education, the currently employed teaching practices inculcating the values of professionalism in medical students are serving simply as a buffer to maintain the pre-training levels of professionalism and prevent them from declining further. Training with regard to professionalism needs to be thoroughly reviewed and revamped if baseline levels of professionalism are to be enhanced during training.

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