The Ecology of Medical Professionalism: Perceived and Emulated, What matters?

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**Abstract**

**Background:** Medical profession has always enjoyed a noble and privileged status in the society. But in the recent decades, there has been a growing concern about infringement of professional values. Medical schools face the pressing need to address this by teaching professionalism to tomorrow's doctors. It is imperative to know the attitude of the millennial students and faculty towards professionalism in order to design the teaching learning activities.

**Aim of this study is to elicit:**

1. the perceptions of professional values by medical students in different Years of medicine (males and females);
2. any change in the attitude of students to professionalism with advancing Years;
3. the perceptions of professional values by Faculty members (preclinical and clinical);
4. the preferred method of teaching and learning professionalism among medical students and staff.

**Methodology:** A cross sectional study was conducted using the PSCOM (Pennsylvania State College of Medicine) questionnaire. Study population consisted of Year 3 (n=130) and Year 5 (n=120) medical students in a Malaysian Medical University in addition to Preclinical staffs (n=30) and Clinicians (n=26).

**Results:** Students in both Years rated well all the attributes but perceptions of Year 5 students differed significantly from that of Year 3 students in two domains. Senior students showed lower scores in areas of equity (p=0.001) and altruism (p=0.006) than juniors. The overall perceptions of staff were similar but clinicians scored higher than the preclinical teachers in the perceptions of duty, enrichment and respect (Table 4). Role modelling topped the list of the preferred teaching learning activity by the students and the faculty. Seminars were the least preferred option by the students.

**Conclusion:** Students’ perceptions of professional values changes with advancing Years. This issue may be addressed by appropriate role modeling by physicians, faculty training in professionalism, case studies in areas of
weaknesses and rewarding faculty displaying excellent professionalism. Students and staff have identified role model as the most preferred teaching learning method. The emphasis on teaching tomorrow’s doctors should encompass not only evidence based medicine but also the art of medicine with humanistic values.

**Keywords:** Professionalism, Medical education, Role modeling, Medical students, Medical faculty

**Introduction**

"The good physician treats the disease;\nthe great physician treats the patient who has the disease" - William Osler

Professional values were unspoken in the past and it was a way of life. Professionalism encompasses a set of attributes or values in a doctor for the public to place trust in him. Giant leaps in technology and corporate growth of health industries seem to have compromised these values in doctors and endangered the public trust in medicine (Coulehan, 2005; S. Cruess & Cruess, 2012). Albeit medical students take the Hippocrates oath and schools perform the "White coat" ceremony during the orientation program on entry, evidence from literature reveals that the attitude of medical students may change as they progress in their course with decline in ethical values and empathy towards patients (Hafferty & Franks, 1994; Newton, Barber, Claridy, Cleveland, & O'Sullivan, 2008). Therefore, teaching professional values, as evidenced by the recommendations of General Medical Council (GMC), UK, American Board of Internal Medicine (ABIM), Association of American Medical Colleges (AAMC), through introduction of attitudinal learning objectives in the curriculum is necessary (R. L. Cruess & S. R. Cruess, 1997; S. R. Cruess & R. L. Cruess, 1997; Medicine, 2002).

Literature reveals that professionalism can be taught as part of formal curriculum that forms the knowledge and cognitive base (S. R. Cruess & R. L. Cruess, 1997). But does it suffice the needs? The General Medical Council acknowledges "an example of the teacher is the most powerful influence upon the standards of conduct and practice of every trainee, whether medical student or junior doctor" (Council, 2009). Positive "Role modeling" by physicians which comprises the informal and hidden curriculum has been shown to have a great influence on students (Baernstein, Oelschlagler, Chang, & Wenrich, 2009; Bandura, 1986; Burgess, Goulston, & Oates, 2015; S. R. Cruess, Cruess, & Steinert, 2008; Falvo, Smaga, Brenner, & Tippy, 1991; Kenny, Mann, & MacLeod, 2003; Wright & Carrese, 2001; Wright, Kern, Kolodner, Howard, & Brancati, 1998) and interns (Wolf, Balson, Fauccett, & Randall, 1989) in cultivating professional values and attitudes in their transition to professional competence. This comprises the informal and hidden curriculum, which assists in fostering virtue-based physicians, and not merely knowledge- and-technology-wise physicians.

To date, several studies have reported the perceptions of medical students to professional attributes but few studies have explored the attitude of the role models, the faculty members. The aims of this study were (1) to establish how students & Faculty at MAHSA University perceive professional values, (2) to detect any change in attitude of students with advancing Years (3) to find out the preferred method of teaching and learning professionalism by students and staff. This study is first in Malaysia to report differences in perceptions of professionalism between medical students and the faculty, which is essential in identifying the most strategic and effective teaching and learning methods.
Methodology

A cross sectional, questionnaire based self-reported survey was conducted among medical students, preclinical and clinical staff. Prior informed consent was obtained and anonymity assured to the participants. The study ensured that Guidelines by the Research Management Centre and ethics committee, Mahsa University were adhered to (Ref no: RO76-05/15).

Inclusion criteria:

I. All medical students who had completed clinical postings in Year 3 & 5.

II. Teachers in preclinical Years (Year 1 & 2) and clinicians teaching Year 3, 4 and 5.

Exclusion criteria: Students/staff not willing to participate in the study.

Sample size: Students who had completed Year 3 (n=130) and Year 5 (n=120) were chosen for the study. Year 3 students had been exposed to simulated patients in Year 1 & 2 and real patients in hospitals in Year 3 and final Year students had had a longer exposure to the hospital environment by two more Years. Both groups had observed professionalism exhibited by preclinical teachers and clinicians during their stint in Phase I and Phase II of MBBS.

After briefing the nature of the study, informed consent was obtained from the students and faculty members. The students and faculty were ensured anonymity regarding details of the questionnaires.

Questionnaires: Students were required to fill in a questionnaire with demographic details such as age, gender, Year of study, citizenship and the preferred method of study of professionalism (lectures, movies, seminars, role modeling by teachers).

They filled in a second questionnaire specific for Professionalism, Penn State College of Medicine (PSCOM) Professionalism Questionnaire © PSCOM, (Blackall et al., 2007) (used with permission). There are 36 statements distributed randomly for assessing professional behaviour: altruism, accountability, duty, excellence, honesty & integrity and respect. The students were asked to rate the degree to which each statement matched with their definition of professionalism on a five-point Likert scale- 1=never, 2= little, 3= some ,4= much and 5= a great deal.

Analysis: Descriptive statistics and Student t-test performed in SPSS software (Version 22) was used for analysis. Mann-Whitney U test was used to compare the mean scores on the perceptions of professionalism and Chi square test to find out the significant difference in the preferred teaching/learning methods.

Results

Students’ characteristics:

There were 250 students enrolled in the study and all of them responded to the questionnaire. Participants were those students who had completed clinical rotations in Year 3 (n=130) and Year 5 (n=120). 63% in both Years were females and 37% were males. More than 60% of all students had undergone Foundation in Science and only 1% and 2% were graduates in Year 3 and Year 5 respectively. Majority of them in both Years were Malaysians and international students were less than 10% (Table 1).
Table 1: Demographic details of Year 3 and Year 5 Medical students

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Students’ Characteristics</th>
<th>Year 5 (n=120)</th>
<th>Year 3 (n=130)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gender (no.,%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>44 (36.7%)</td>
<td>48 (36.9%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>76 (63.3%)</td>
<td>82 (63.1%)</td>
</tr>
<tr>
<td>2</td>
<td>Entry Criteria (no.,%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foundation in Science</td>
<td>73 (61.3%)</td>
<td>83 (63.8%)</td>
</tr>
<tr>
<td></td>
<td>GCE-A level</td>
<td>22 (18.5%)</td>
<td>24 (18.5%)</td>
</tr>
<tr>
<td></td>
<td>SPTM (Higher Secondary)</td>
<td>5 (4.2%)</td>
<td>7 (5.4%)</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>17 (14.3%)</td>
<td>15 (11.5%)</td>
</tr>
<tr>
<td></td>
<td>Graduates</td>
<td>2 (1.7%)</td>
<td>1 (0.8%)</td>
</tr>
<tr>
<td>3</td>
<td>Nationality (no.,%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Malaysian</td>
<td>111 (92.5%)</td>
<td>121 (93.0%)</td>
</tr>
<tr>
<td></td>
<td>International</td>
<td>9 (7.5%)</td>
<td>9 (7.0%)</td>
</tr>
<tr>
<td>4</td>
<td>Age (mean, SD)</td>
<td>25.11 (1.85)</td>
<td>23.93 (2.29)</td>
</tr>
</tbody>
</table>

Comparison of mean scores of Year 3 and Year 5 students in professional attributes:

Although the students in both Years had scored well in all professional attributes, a significant difference was observed in the overall scores of Year 3 and Year 5 students. Year 3 students demonstrated good scores on perceptions of all professional attributes while Year 5 students showed a slight decline in equity and altruism. Year 5 students also scored marginally less in accountability and duty (Table 2).

Table 2: Students’ scores with regard to attributes of professionalism
Comparison of students’ perceptions of professional attributes by gender:

Perceptions of male and female students in final Year did not show any significant difference (Table 3). Among the first clinical Years, there was a significant trend towards altruism (p=0.005) by the female students.

Table 3: Distribution of the scores in the domains of professionalism by Gender

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Domain</th>
<th>Year 5 (n=120)</th>
<th>Year 3 (n=130)</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accountability</td>
<td>25.30 (8.08)</td>
<td>28.21 (3.84)</td>
<td>0.042</td>
</tr>
<tr>
<td>2</td>
<td>Enrichment</td>
<td>21.47 (6.34)</td>
<td>23.45 (3.76)</td>
<td>0.174</td>
</tr>
<tr>
<td>3</td>
<td>Equity</td>
<td>14.71 (4.55)</td>
<td>16.80 (2.21)</td>
<td>0.001</td>
</tr>
<tr>
<td>4</td>
<td>Integrity</td>
<td>29.80 (8.45)</td>
<td>32.38 (4.03)</td>
<td>0.162</td>
</tr>
<tr>
<td>5</td>
<td>Altruism</td>
<td>11.09 (3.77)</td>
<td>12.70 (1.79)</td>
<td>0.006</td>
</tr>
<tr>
<td>6</td>
<td>Duty</td>
<td>21.10 (6.98)</td>
<td>23.48 (3.36)</td>
<td>0.048</td>
</tr>
<tr>
<td>7</td>
<td>Respect</td>
<td>7.36 (2.26)</td>
<td>8.06 (1.35)</td>
<td>0.055</td>
</tr>
<tr>
<td>8</td>
<td>Overall</td>
<td>130.86 (38.83)</td>
<td>145.09 (17.03)</td>
<td>0.031</td>
</tr>
</tbody>
</table>

* Mann-Whitney U test

Comparison of perceptions of professional attributes of preclinical and clinical teachers:

The overall score was similar for both the preclinical and clinical staff. They did not differ in their perceptions of altruism, accountability and equity. There was a significant difference in the mean scores for perceptions of duty, enrichment and respect with the clinicians scoring higher than the preclinical teachers (Table 4).

Table 4. Perceptions of preclinical and clinical staff

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Domain</th>
<th>Year 5</th>
<th>Year 3</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males (n=44)</td>
<td>Females (n=76)</td>
<td>p-value</td>
</tr>
<tr>
<td>1</td>
<td>Accountability</td>
<td>25.59 (6.22)</td>
<td>25.14 (9.02)</td>
<td>0.48</td>
</tr>
<tr>
<td>2</td>
<td>Enrichment</td>
<td>22.56 (3.79)</td>
<td>20.84 (7.37)</td>
<td>0.78</td>
</tr>
<tr>
<td>3</td>
<td>Equity</td>
<td>15.15 (3.44)</td>
<td>14.46 (5.10)</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>Integrity</td>
<td>31.27 (5.63)</td>
<td>28.94 (9.65)</td>
<td>0.52</td>
</tr>
<tr>
<td>5</td>
<td>Altruism</td>
<td>11.22 (3.16)</td>
<td>11.01 (4.10)</td>
<td>0.65</td>
</tr>
<tr>
<td>6</td>
<td>Duty</td>
<td>21.97 (6.09)</td>
<td>20.60 (7.44)</td>
<td>0.25</td>
</tr>
<tr>
<td>7</td>
<td>Respect</td>
<td>7.65 (1.47)</td>
<td>7.19 (2.60)</td>
<td>0.96</td>
</tr>
<tr>
<td>8</td>
<td>Overall</td>
<td>135.45 (27.19)</td>
<td>128.21 (44.15)</td>
<td>0.79</td>
</tr>
</tbody>
</table>

* Mann-Whitney U test
Comparison of perceptions of professional attributes between students and staff:

There was no significant difference in the perceptions of students and staff overall. A trend towards a higher integrity among staff than the students was noted (p=0.005, Table 5).

**Table 5. Perceptions of professional attributes by students and staff**

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Students (n=250)</th>
<th>Staff (n=56)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability</td>
<td>26.82 ± 6.40</td>
<td>27.32 ± 5.98</td>
<td>0.612</td>
</tr>
<tr>
<td>Enrichment</td>
<td>22.49 ± 5.24</td>
<td>22.94 ± 4.01</td>
<td>0.784</td>
</tr>
<tr>
<td>Equity</td>
<td>15.80 ± 3.68</td>
<td>16.48 ± 3.17</td>
<td>0.106</td>
</tr>
<tr>
<td>Integrity</td>
<td>31.14 ± 6.65</td>
<td>33.21 ± 6.12</td>
<td>0.005*</td>
</tr>
<tr>
<td>Altruism</td>
<td>11.92 ± 3.02</td>
<td>12.25 ± 2.63</td>
<td>0.545</td>
</tr>
<tr>
<td>Duty</td>
<td>22.34 ± 5.53</td>
<td>22.55 ± 3.18</td>
<td>0.846</td>
</tr>
<tr>
<td>Respect</td>
<td>7.72 ± 1.87</td>
<td>7.98 ± 1.88</td>
<td>0.218</td>
</tr>
<tr>
<td>OVERALL</td>
<td>138.26 ± 30.36</td>
<td>142.75 ± 25.05</td>
<td>0.278</td>
</tr>
</tbody>
</table>

The preferred method of teaching and learning professionalism:

Role modeling is the most preferred teaching and learning method by both students and faculty (Fig.1). Majority of students in both Years preferred learning professionalism by role modeling by teachers as the first choice followed by case studies, lecturers and movies.

Seminars were the least preferred tools by the students and preclinical teachers. Case studies were largely supported by clinical teachers and well supported by students as well. Lectures were favored equally by preclinical and clinical staff. Between the students, final Year students’ preference was less inclined towards lectures than first clinical Year students (Fig. 1).
This paper describes the perceptions of professional attributes by students as well as the Faculty at a medical university in Malaysia. We also have attempted to find if perceptions can change with advancing years of education. The tool used for this survey is the PSCOM Professionalism Questionnaire. The study also unveils the preferred way of learning and teaching professionalism by students and staff respectively.

Attitudinal change among student with advancing years in Medicine

Students in both years rated all attributes well. A significant difference was observed in the overall scores of year 3 and year 5 students. Year 3 students demonstrated good scores on perceptions of all professional attributes while year 5 students showed a slight decline in equity and altruism (Table 2). This is akin to the reports of prior researchers (Akhund, Shaikh, & Ali, 2014; Crandall, Reboussin, Michielutte, Anthony, & Naughton, 2007; Kopelman, 1983) that students tend to develop a change in attitude to professional values with growing years. Generational studies show that attitudinal feelings in a particular age group are strongest early in life (Johnston, 2006) and this may account for higher scores in students in the early clinical year.

The observed decrease in the scores of equity and altruism can possibly be explained in several ways. Albeit students enter medical school with some inherent values of professionalism and acquire competence in attitude in due course, they are yet to be fully experienced in maintaining this behavior in the face of challenging circumstances (Leach, 2004). Constant demonstration of professional attitudes in the real world situation comes with experience and it is felt that the later year students will learn to master it as they evolve as practicing physicians. Attitude or values held unprofessional by students at the beginning of the course and emerging as acceptable professional values in the later years (Byszewski, Hendelman, McGuinty, & Moineau, 2012) can possibly explain this downturn in perception of final years in this study. Students’ knowledge below average level in early years of medicine prevents them from coping with patients and acquiring their identities as doctors.

It is often witnessed that at the time of entry to medical schools and during interviews students displaying a keen interest in the medical profession and expressing deep passion towards it too. Many claim that it is their childhood

**Fig 1: Preferred Method of Teaching & Learning Professionalism MBBS**
dream to become a doctor and serve the society. "We have tended to assume that the good people we admit to medical school will remain good no matter what kind of behavior we visit on them or parade in front of them. All of the evidence points the other way." Change in the attitude of students with advancing years towards cynicism and decreased empathy has been reported by others (Wolf et al., 1989). Literature reveals that empathy and idealism decline in medical students as they progress towards the completion of undergraduate medical course. Other researchers (Baingana et al., 2010; Hojat et al., 2004; Newton et al., 2008; Reddy et al., 2007; Rosenthal et al., 2011) have noted that empathy in students takes a downward trend year three onwards at the time when it is most needed to initiate socialization with real life patients (Bellini & Shea, 2005). Researchers have debated what causes these changes in students. It has been claimed as "socialization amnesia" where students unintentionally lose empathy with time (Hafferty & Franks, 1994). It may also be that evidence based medicine keeps doctors emotionally uninvolved with patients and support this attitude in students (Coulehan & Williams, 2001; Halpern, 2001). The decline in attitude is perhaps owing to anxiety in taking exams, insufficient sleep, difficulties in communicating with patients and establishing interpersonal relationships in the hospital environment (Newton et al., 2008). Contrary to the present study, no difference in the perceptions of preclinical and clinical students was noted in another study at a different Malaysian University (Haque et al., 2016). This probably is attributable to the difference in the composition of student population, educational and cultural background.

Modest evidence of increased altruism in female students compared to males

Perceptions of male and female students in final year did not show any statistically significant difference (Table 3). Among the first clinical years, there was a significant trend towards altruism (p=0.005) by the female students. Others have also claimed that females in all years were more inclined to be caring (Crandall et al., 2007; Nath, Schmidt, & Gunel, 2006). A survey on the perceptions of students on professionalism at another Malaysian university has reported that females scored more on responsibility (Haque et al., 2016).

Clinicians place greater emphasis on some professional attributes than preclinical staff

Overall score both the preclinical and clinical staff affirmed that professional attributes are important. They did not differ in their perceptions of altruism, accountability and equity. The clinicians seemed to have an edge over preclinical teachers in the perceptions of duty, enrichment and respect (Table 4). This may be because of greater interaction of clinicians with patients in the real time world. The statements ascribed to duty included reporting medical errors, respecting patient's autonomy and help them form informed decisions and show commitment to confidentiality. It can be argued that clinicians identified these statements as appropriate attitude in their relationship with patients more than their preclinical counterparts. Enrichment alludes to statements like reviewing other colleagues work with constructive comments to improve it, promoting the welfare and development of the junior faculty, offering assistance to a colleague's professional and personal development. The clinicians appeared to have advantage over preclinical staff perhaps owing to the scope of their job responsibilities; they have the opportunity to train more interns, junior doctors and nurses to attain professional skills in their field (Coulehan, 2005; Crosby, 2000; Goldie, Dowie, Cotton, & Morrison, 2007; Huddle, 2005).

Higher integrity displayed by staff than medical students

Students and staff affirmed the entire professional attributes essential. A trend towards a higher integrity among staff than the students was noted (p=0.005, Table 5). It is worth mentioning that all statements under integrity focused on upholding scientific standards based on experience, assuming personal responsibility for patient care, reporting data...
consistently maintain patient/physician relationship without personal gain and advocating patients’ interest over one’s own interest. The difference between staff and students with integrity is perhaps all our students are still students and yet to play the care giver role in their internship. They will experience more responsibility and a different relationship with patients as caregivers. It is natural that professional virtues being a dynamic, their own experiences, reflections and emulating good role models will change their attitude to integrity in future (Burgess et al., 2015; Stern & Papadakis, 2006). The small difference in the scores of integrity between students and staff can also be considered as generational behavior and not unprofessional behavior. Millennials differ from the previous generation of teachers and want to strike a work-life balance (Epstein & Howes, 2006) and hence their attitude may tilt a little towards self-interest.

Role modeling as the ‘gold standard’ in teaching and learning

We found that role modeling reigned supreme among all teaching-learning methods by both students and faculty (Fig. 1). Majority of students in both years preferred learning professionalism by role modeling by teachers as the first choice followed by case studies, lectures and movies which is in line with the findings of prior research (Akhund et al., 2014; Byszewski et al., 2012; S. R. Cruess et al., 2008; Morreale, Balon, & Arfken, 2011; Ratanawongsa et al., 2006; Riley & Kumar, 2012; Weissmann, Branch, Gracey, Haidet, & Frankel, 2006). Students imbibe professional values from the culture of the learning environment, (Mann, 2011) the teachers, peers and hospital patients to practice in the community, evolving with time, in their professional journey (Johnston, 2006). Harden and Crosby claim that a good teacher is more than a lecturer and has 12 roles to play of which role model has the greatest influence on students (Crosby, 2000). Clinical teachers as positive role models help students prepare themselves enter workplace as doctors and learn to socialize with patients in the community in future (Goldie et al., 2007). Teachers as role models can be very effective not only through bedside teaching in hospitals but also in lecture theatres, small group sessions where he can narrate and reflect on his personal experiences at a different and more lively angle than text books (Coulehan, 2005; Crosby, 2000; Huddle, 2005). This combination of role model and reflection will help students understand the values explicitly and incorporate as their own attitude (Côté & Leclère, 2000; Ludmerer, 1999).

Case studies were largely supported by clinicians than preclinical teachers and well supported by students as well. Basic science teachers are seen to prefer case studies less than the clinical teachers. The reason for is possibly because they are not medically qualified (Crosby, 2000). Several groups have been successful in using vignettes or case based scenarios to impart professional values (Hat̫em, 2003; Hill-Sakurai, Lee, Schickedanz, Maa, & Lai, 2008; Roberts, Hammond, Geppert, & Warner, 2004). Case studies (vignettes) enable a teacher to discuss clinical problems of significance, arouse the interest of students, and direct them to relevant pathophysiology by narrating suitable examples.

Seminars were the least preferred tools by the students and preclinical teachers Other authors also have observed that symposium or seminar to be the least popular method by medical (Gupta & Rathod, 2016). The reason for seminar being less popular could be that active involvement is only by those who are presenting and no the whole class.

Lectures may promote surface learning whereas case studies help in critical thinking and reflection. Lectures were favored equally by preclinical and clinical staff. Between the students, final year students’ preference was less inclined towards lectures than first clinical year students (Figure 1). This may be because they can experience learning with real patients in the wards through bed side teaching and case presentations which offers a wider scope for peer interaction than lectures.
Conclusion

This study reveals that students come in with some professional values on entry to medical school and attitude may change with advancing Years. It also indicates that students preferred way of learning the virtues of professionalism is by role models. Hence the suggestion from this study is that professional values be taught from preclinical Years by role models who will have the greatest impact through experiential and reflective learning in preparing students for community practice. It is also implied that faculty training as role models is a must and that students be followed up in subsequent Years to track any change in attitude and remediation done if necessary. Our findings are also relayed to the Faculty to make necessary curricular and assessment changes to Personal and Professional Development.

Limitations of the study:

A potential limitation identified is that the study was limited to one university. Therefore, extrapolation of interpretation to the entire Malaysian medical school population needs to be cautiously made. In addition, this is only a snapshot of the attitude of the students at one particular time. Students’ behavior may not exactly reflect the attitude shown in the survey.

Strength of the study:

An assessment of the students’ existing attitudes and perceptions toward professionalism is germane to planning /changing the curriculum /teaching learning activities to improve professional behavior. An advantage of the PSCOM questionnaire used in this study is that we can follow up the cohort of students for any change in attitude with advancing Years.

Conflict of interest

The authors report no conflict of interest, financial or otherwise.

Take Home Messages

- Students come in with some professional values on entry to medical school and attitude may change with advancing Years of education;
- Positive role modeling is preferred way of learning/teaching professional values among medical students and staff;
- Medical schools should provide formal, informal and hidden curriculum in a safe learning environment.

Notes On Contributors

Chitra Govindaraja (MBBS, MD) - concept of study, designed the study, data collection, interpretation of data and drafted the manuscript.

Ganesh Ramachandran (MD, FRCOG) - collection of data, manuscript preparation assistance, proofreading.

Aung Ko Ko Min (MBBS, MD, MPH) - design of study, data collection, Statistical analysis and interpretation of
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Appendices
Declaration of Interest

The author has declared that there are no conflicts of interest.