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Professionalism perspectives among medical students of a novel medical graduate school in Malaysia

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Abstract: Defining professionalism in this constantly evolving world is not easy. How do you measure degrees of benevolence and compassion? If it is so obvious to our profession, what professionalism is, then why is it so difficult to teach it to medical students and residents? Today's definition of medical professionalism is evolving – from autonomy to accountability, from expert opinion to evidence-based medicine, and from self-interest to teamwork and shared responsibility. However, medical professionalism is defined as the basis for the trust in the patient–physician relationship, caring and compassion, insight, openness, respect for patient dignity, confidentiality, autonomy, presence, altruism, and those qualities that lead to trust-competence, integrity, honesty, morality, and ethical conduct. The purpose of this study is to explore professionalism in terms of its fundamental elements among medical students of Universiti Sultan Zainal Abidin (UniSZA). This was a cross-sectional study carried out on medical students of UniSZA. The study population included preclinical and clinical medical students of UniSZA from Year I to Year V of academic session 2014/2015. The simple random sampling technique was used to select the sample. Data were collected using a validated instrument. The data were then compiled and analyzed using SPSS Version 21. Out of 165 questionnaires distributed randomly among Year I to Year V medical students of UniSZA, 144 returned, giving a response rate of 87%. Among the study participants, 38% (54) and 62% (90) were males and females, respectively. The grand total score was 170.92±19.08. A total of 166.98±20.15 and 173.49±18.09 were the total professionalism score of male and female study participants, respectively, with no statistically significant (P=0.61) differences. This study found almost similar levels of familiarity with all fundamental issues of professionalism with no statistically (P>0.05) significant differences. Medical faculty members should give more effort for the professional development of medical doctor. Henceforth, researchers believe and expect that the country will produce more rational and holistic medical doctors.

Keywords: professionalism, perspectives, medical students, Malaysia

Introduction

Medical professionalism is defined as "commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population" by the Accreditation Council for Graduate Medical Education, USA.[1] The Merriam-Webster dictionary defines professionalism as "the conduct, aims, or qualities that characterize or mark a profession or a professional person"; and it defines a profession as "a calling requiring specialized knowledge and often long and intensive academic preparation".[2] It also defined as "as a vocation or calling, especially one involving a degree of skill, learning or science. Another helpful description is that of a trade or occupation pursued for higher motives, to a proper standard".[3]

> The term professionalism is used to describe those skills, attitudes and behaviors which we have come to expect from individuals […] concepts such as maintenance of competence, ethical behavior, integrity, honesty, altruism, service to others, adherence to professional codes, justice, respect for others, self-regulation, etc.[4]

Defining professionalism in this constantly evolving world is not an easy work.

> How do you measure degrees of benevolence and compassion? If it is so obvious to our profession, what professionalism is, then why is it so difficult to teach it to medical students and residents?[5]

> Today's definition of medical professionalism is evolving – from autonomy to accountability, from expert opinion to evidence-based medicine, from self-interest to teamwork and shared responsibility.[6]

However, medical professionalism is defined as the basis for the trust in the patient–physician relationship, caring and compassion, insight, openness, respect for patient dignity, confidentiality, autonomy, presence, and altruism, in addition to those qualities that lead to trust-competence, integrity, honesty, morality, and ethical conduct.[7–9]

> Professional competence is the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and the community being served.[10]

Modern medicines promote more patient-centered and shared decision-making approach. In these days,

> […] professionalism includes the ability to communicate specialist knowledge, diagnosis and treatment options in an easy-to-understand way, rather than seeking to use expert knowledge as a means to create distance from, and a dependency of, the public. Professionalism also involves confidentiality, continuity, trust, honesty, and compassion.[3]

> The practice of medicine is not a business and can never be such. Our fellow creatures cannot be dealt with as a man deals in corn and coal; the human heart by which we live must control our professional relations.[11]

The self-interest issue in the modern world started working as potent forces of a political, legal, and market-driven nature is producing great stress on the practice of medicine, reducing the public respect toward the Healer role of medical practitioners.[12–14] All of these issue have contributed to the development of the medical charter which can be considered as Hippocratic Oath of the modern era, that emphasizes more on defining and developing professionalism. That is how we conduct ourselves as physicians while serving our patients and society in our roles as a healer, as a medical professional, and/or as a medical scientist.[15–18] There also comes nature vs nurture theory.[19] Professionalism can be taught in the classroom, or the qualities required to meet the professional ideals, such as selflessness, empathy, and benevolence, have to be an innate quality of an individual,[20] and admission system has to figure out a way to identify those ideas and help flourish it because medical educators can preach altruism, but it cannot transform a student's personality.[20,21]

Medical students are future medical doctors, and very soon they are going to "the final frontier"[22] to be exposed to a situation where patient care is influenced by different health-related profit-making corporate groups.[22,23] The link between a medical doctor and pharmaceutical industry, the most important stakeholder in any health care system, has been changed not only in private practice but also in public hospitals in the last few decades.[22] Actually, the secret relationship with the pharmaceutical industry and medical doctors was first described in 1961 in an article written by Doctor Charles D May published in the *Journal of Medical Education*.[24] It has been discussed in different reputed journals that the pharmaceutical industry spends between US$27 and US$57 billion every year on drug promotion,[25–28] but global promotional activity costs >US$70 billion.[29] Medicinal manufacturing companies use 15%–20% of its yearly financial plan for promoting their products.[30] Previous studies reported back in the 1990s stated that the industry spends US$8,000–13,000 for each medical doctor every year.[31,32]

> Unlike the door-to-door vendors of cosmetics and vacuum cleaners, drug reps do not sell their product directly to buyers. Consumers pay for prescription drugs, but physicians control access. Drug reps increase drug sales by influencing physicians, and do so with finely titrated doses of friendship.[33]

> Reps may be genuinely friendly, but they are not genuine friends. Drug reps are selected for their present ability and outgoing natures and are trained observant, personable, and helpful. […] to assess physicians' personalities, practice styles, and preferences, and relay this information back to the Company.[33]

Another study suggested that doctors meet pharmaceutical promoters at least two to four times a month.[34–36] Very often, medical doctors accept gifts, such as drug samples, stationery, dinner in very high-class restaurants, joining industry-funded continuing medical education program,

and travel or accommodation in the fabulous resort from pharmaceutical sales representative.[35,37–39]

> The commercial needs of countless, and fiercely competing pharmaceutical companies has led them to depend on the tried and tested 3Cs: Convince, if possible, confuse if necessary and corrupt if nothing else works. Chandra Gulhati, Editor, MIMS India.[40]

> It's my job to figure out what a physician's price is. For some it's dinner at the finest restaurant, […] them prescribe confidently and for others it's my attention and friendship, but at the most basic level, everything is for sale, and everything is an exchange.[33]

"During training, I was told, when you're out to dinner with a doctor, 'The physician is eating with a friend. You are eating with a client'".[33]

> There have also been shameful misconducts by members of the profession for personal gains, which include fudging of trial results to favor the sponsors and the prescription of drugs unnecessarily to patients.[41]

"Anyone who says that the drug company is discussing of doctor's carries no influence is joking, astonishingly naive, or deliberately trying to mislead".[42] An aggressive drug promotional activity over and over again changes the prescribing behavior toward costly patent-branded medicine of generics, thereby causing rapid booms of the cost of medical care and many occasional irrational prescribing.[35,36,43–49] It has been reported that physicians were so much influenced that they later asked to include some particular branded medicine to incorporate in hospital guidelines.[44] Accepting gifts not only promotes industry's profit but also damages the great professional respect of medical doctors. Therefore, physicians are increasingly losing trust from their patients.[35,50] Henceforth, a number of the expert group suggested more control of medicine profile-raising accomplishments because pharmaceutical industry very often provides misleading information.[51–58] There are numerous reports published in highly reputed journals throughout the world medical professionalism, and commitment of medical doctor is grind down when physicians are accepting financial incentives and a gift from pharmaceutical and other profit-making organizations.[34,47,48,54,59–66] The most concerning issue is that medical students are also receiving gifts

> [...] in spite of medical schools' efforts to shield budding doctors from the dark forces of the medical–industrial complex, more than half of medical students end up receiving gifts from pharmaceutical representatives by the end of their fourth year,

According to an upcoming study.[67] A number of studies reported that the majority of medical students (85%) felt that it is immoral to receive gift worth of US$50 for politician, but only <50% of medical students and professionals claimed that it was unbefitting to accept the gift of the same cost.[51,68]

> Ethics, in general, is a philosophical issue and is defined as the philosophical study of morality. The scientific study of morality is descriptive ethics, and it is generally concerned with the explanation of moral views and its causal origin.[69]

Medical ethics and values should be the basic stratagems to govern every decision in medical practice and patient care.[70] One Indian medical ethics journal commented that

> [...] corruption, an undeniable reality in the health sector, is arguably the greatest ethical crisis in medicine today. However, it remains poorly addressed in scholarly journals and by professional associations of physicians and bio-ethicists.[71]

In modern era, medical doctors usually after graduation take an oath to safeguard their patients from harmful and waggish activities, and such oath has been in practice since the time of Hippocrates. Hippocratic Oath guides the premier objective of the medical profession. It talks about not only obligations concerning the patient but also responsibilities headed for fellow colleagues of medicine. Overall, Hippocratic Oath discusses the medical professional's commitment to give comfort and relief and not to cause any kind of harm to the patient.[72] Medical professionalism promotes the ethical and moral duties and responsibilities of a doctor to his/her patients.[73] Therefore, high standard of ethical principles and practice among physicians as individual and business are expected to form the bridge between doctors and the community.[74–76] "There is definitely a decline in ethics in the field of Medicine and in the society as a whole".[77] Especially "when financial considerations enter into medical decisions, values are always brought into question".[78] Medical doctors are pebbledash enormous criticism because the medical professionalism is declining throughout the world because of changed health care policy and practice.[79] The basis of professionalism must be restored back to its original position, as a medical doctor it is expected to be moral and highly professional, by any individual and also broader societies.[76] Henceforth, teaching medical professionalism and the ethical issue should be started as early as possible in medical school. As it is believed that morality should be taught in the initial days of life,[80–83] it has been reported that

> the medical ethics curriculum can be improved by focusing it on professional formation as preparation for a lifelong-commitment to professionalism in patient care, education,

> and research. […] preserves its status as a caring profession that situates the needs of patients as its top priority.[84]

A number of studies advised to incorporate medical professionalism and ethics in the undergraduate medical curriculum, especially in public health and family medicine module to prepare high-quality doctors in their community.[85–90] To best of our knowledge, there are only six studies identified: four studies involving medical students, one study involving medical resident in a public hospital in Malaysia, and the remaining one study involving medical doctor and association.[91–96] The Faculty of Medicine, Universiti Sultan Zainal Abidin (UniSZA), is scheduled to conduct a major revision in the next few years of the undergraduate medical curriculum.[97,98] The medical faculty of the UniSZA has evolved with time. It initially started as a faculty of health sciences, offering three diploma programs in radiography, medical laboratory technology, and nursing science. UniSZA was honored with the trust given by the Ministry of Higher Education of the Government of Malaysia to contribute toward the development and improvement of health care by the approval of the university's medical program in Kuala Terengganu, Terengganu, Malaysia. The approval was granted by the Ministry of Higher Education on February 3, 2009. Faculty had already started one degree program, Dietetics (Honors) in 2008; MBBS (Bachelor Medicine and Bachelor of Surgery) became a part of the program in 2009. In 2011, a Diploma in Physiotherapy was added to existing diploma programs. It is expected that faculty will admit new groups of students in 2015 into another three new programs: 1) Bachelor of Biomedicine, 2) Bachelor of Medical Imaging and Diagnostics, and 3) Bachelor of Nutrition. The first group of 30 Medicine and Bachelor of Surgery students, admitted in 2009, graduated in August 2014. UniSZA medical graduates started working as house officers and serving Malaysia from early 2015. The aim of this study is to explore the personal evaluation of professionalism in terms of its fundamental elements among UniSZA medical students and to equate any variances of professionalism between sexes and years of study. Malaysian medical education usually of 5 years program and 2 years housemanship (internship or foundation year) in hospitals owned by the Ministry of Health, Government of Malaysia.[99–101] Therefore, this exercise is to ensure that a highly professional and committed medical doctor is produced for Malaysian community. This study provides suitable data to design a new educational program to equip our students.

Materials and methods

This was a cross-sectional study conducted on medical students of UniSZA. The study population was preclinical and clinical medical students of UniSZA from Year I to Year V of academic session 2014/2015. The sample size was calculated 169 among 300 total medical students of Faculty of Medicine, UniSZA, using a sample size calculator.[102] Another 10% nonresponse rate was added to encounter the missing value of questionnaires that resulted to 186 of total subjects. The simple random sampling technique was used to select the sample. Unfortunately, when data were collected in a predecided time in the lecture hall, only 165 students turned out, rest of the 21 students, although properly informed, did not come to participate in this study. Therefore, 165 questionnaires (Figure S1) were distributed among the students. The period of study was September to October 2015. Data were collected using a validated instrument.[93,94] Although the instrument was developed and validated in another public university in Malaysia, but the questionnaire was again pretested and validated for the medical students of UniSZA.[91] As no change was required precisely the same questionnaire was maintained of Universiti Kebangsaan Malaysia to conduct the study after revalidation in UniSZA. Most of the sections of this questionnaire demonstrated acceptable values, with a range between 0.672 and 0.882, which indicated that both instruments possessed good internal consistency and reliability. The evidence of convergent validity was shown by the significant correlations between the items of each section and the overall mean in each section (r_s=0.332–0.718; P<0.05).[103,104] The questionnaire contained nine core elements of professionalism attributes, such as honesty, accountability, confidentiality, respectfulness, responsibility, compassion, communication, maturity, and self-directed learning. There was a range of statements under each professionalism core element that was measured by 5-point Likert scale, giving a maximum score of 220. The mean of all nine attributes' scores represented the professionalism of respondents as a whole. The instrument also contained four open-ended questions exploring about respondents' opinion on what professionalism meant to them, how professionalism should be taught, how they learned professionalism, and how professionalism should be assessed. The data were then compiled and analyzed using SPSS Version 21 (IBM Corporation, Armonk, NY). This research obtained the certificate of ethical approval from UniSZA Research Ethics Committee (UHREC) [UniSZA, C/1/UHREC/628-1 (39), August 3, 2015]. Research ethics were strictly maintained, especially regarding confidentiality. Explanation concerning the purpose of the study was given, and informed consent was obtained verbally from the participants to utilize their data for research purposes. UHREC had examined the questionnaire before the study was started and was satisfied that there were no sensitive questions. The current research was totally anonymous and voluntary. Thus, researchers thought that verbal informed consent was sufficient. The principal investigator

informed UHREC and took formal permission for the verbal consent procedures before data collection began. The principal investigator Professor (Dr) Mainul Haque was an academic staff of UniSZA when the current research was conducted and this article was accepted.

Results

Out of 165 questionnaires distributed randomly among Years I–V medical students of UniSZA, 144 returned, giving a response rate of 87%. Among the study participants, 38% (54) and 62% (90) were male and female, respectively. A total of 65% (94), 17% (25), 17% (24), and 1% (1) of the study participants were from Malay, Chinese, Indian, and other races, respectively. A total of 66% (95), 15% (21), 12% (18), 5% (7), and 2% (3) of the study participants have their religion as Islam, Buddha, Hindu, Christian, and others, respectively. Again, the study participants were 20% (29), 23% (33), 17% (24), 19% (27), and 21% (31) from Year I, Year II, Year III, Year IV, and Year V, respectively. A total of 43% (62) and 57% (82) of the study participants were from Phase I (basic sciences) and Phase II (clinical medicine), respectively. A total of 5% (7), 4% (6), 11% (16), 5% (7), 9% (12), 6% (9), and 60% (87) of the study participants obtain grades A, B+, B, C+, C, passed, and not stated, respectively, in the last examination (Table 1 and Figure 1). UniSZA Faculty of Medicine has its' own unique grading policy (Table S1).

The total mean scores were 22.44±3.43, 18.38±2.95, 15.56±3.01, 24.45±3.11, 23.13±2.91, 16.51±4.85, 18.75±3.10, 23.77±3.20, and 8.13±1.42 for honesty, accountability, confidentiality, respectfulness, responsibility, compassion, communication, maturity, and self-directed learning, respectively, and the grand total was 170.92±19.08 (Table 2). A total of 166.98±20.15 and 173.34±18.09 were the total professionalism scores of male and female study participants, respectively, with no statistically significant (P=0. 61) differences (Table 3). Elements of professionalism showed no statistically significant differences between male and female research respondents except for responsibility component with statistically significant (P=0.020) differences, and rest of the eight elements of professionalism had no statistically significant (P>0.05) differences (Table 3). A total of 170.17±18.67 and 171.49±19.49 were the total professionalism scores of preclinical and clinical study participants, respectively, with no statistically significant (P=0. 694) differences (Table 4). There were no statistically significant (P>0.05) differences observed between preclinical and clinical phases in the nine core elements of professionalism (Table 4). A total of 170.33±18.69, 170.03±18.94, 171.10±26.38, 171.31±16.46, and 171.93±16.67 were the total professionalism scores of Year I, Year II, Year III, Year IV, and Year V of study participants, respectively, with no statistically significant (P=0.996) differences (Table 5). Similarly, there were no statistically significant (P>0.05) differences observed in any of the nine components of professionalism (Table 5). A total of 168.50±31.21, 180.00±19.64, 176.69±21.02, 168.17±10.17, 173.08±21.62, 151.71±29.4, and 170.83±16.01 were the total professionalism scores of study participants who obtained grades A, B+, B, C+, C, passed, and not stated in the last examination, respectively, with no statistically significant (P=0.11) differences (Table 6). Based on the mean scores, comparison respectful (P=0.05) and compassion (P=0.04) showed statistically significant differences, and seven of the nine core elements of professionalism showed no statistically significant (P>0.05) differences (Table 6).

The last part of the questionnaire contains four open-ended questions. The first question was "what do you mean by professionalism", and 48% (69), 15% (22), 15% (22), and 22% (31) of the study participants thought that the answer was a

Table 1 Sociodemographic profiles of the study participants (n=144)

Variable	n	%
Sociodemographic characteristics		
Sex		
Male	54	37.5
Female	90	62.5
Race		
Malay	94	65.3
Chinese	25	17.4
Indian	24	16.7
Others	1	0.7
Religion		
Islam	95	66.0
Buddha	21	14.6
Hindu	18	12.5
Christian	7	4.9
Others	3	2.1
Educational characteristics	**n**	**%**
Years of study		
Year I	29	20.1
Year II	33	22.9
Year III	24	16.7
Year IV	27	18.8
Year V	31	21.5
Phases of study		
Phase I (basic sciences)	62	43.0
Phase II (clinical medicine)	82	57.0
Grades of the last examination		
A	7	4.9
B+	6	4.2
B	16	11.1
C+	7	4.9
C	12	8.3
Passed	9	6.3
Not stated	87	60.4

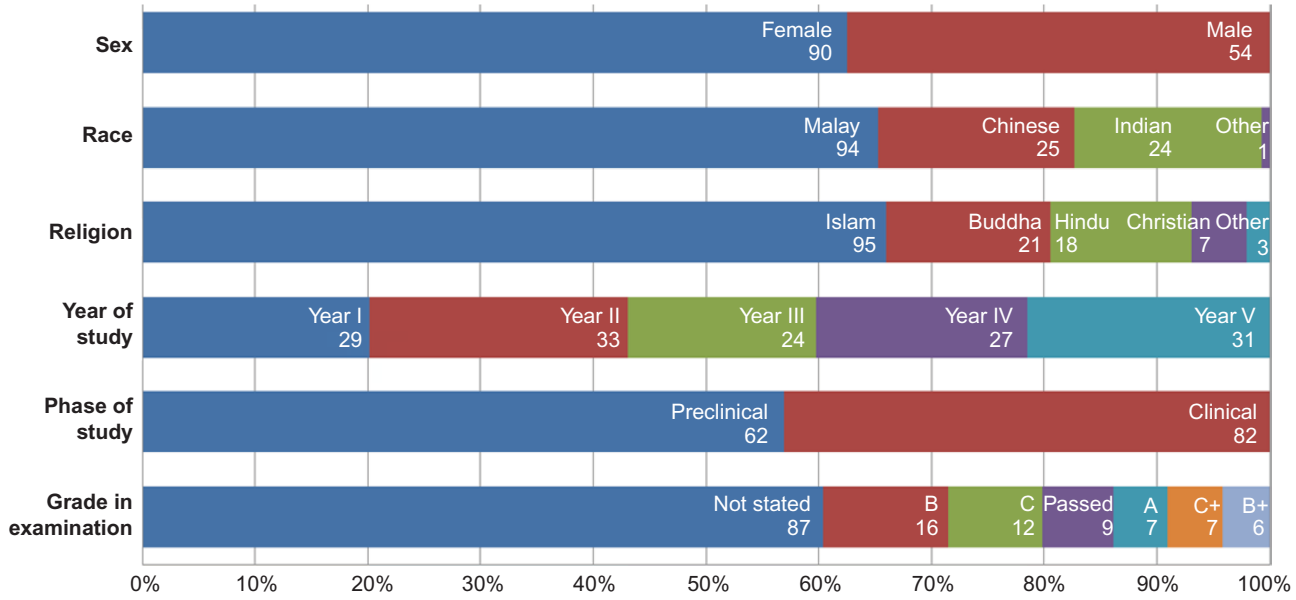

Figure 1 Profiles of participants of professionalism questionnaire by medical students of UniSZA (N=144).
Abbreviation: UniSZA, Universiti Sultan Zainal Abidin.

Table 2 Mean item scores of professionalism of medical students of UniSZA (n=144)

Professionalism characteristics	Item	Mean (SD)
Honesty	I am fair to people	3.79 (0.72)
	I am straightforward to people	3.64 (0.93)
	I do not tell lies	3.35 (1.06)
	I am truthful to people	3.79 (0.72)
	I keep my promise	3.94 (0.83)
	I admit mistakes	3.95 (0.70)
Total		22.44 (3.43)
Accountability	I am punctual	3.60 (0.92)
	I carry out my duty well	3.81 (0.74)
	I inform supervisor/team when mistakes occur	3.85 (0.79)
	I am a good leader	3.40 (0.81)
	I complete assignments on time	3.74 (0.78)
Total		18.38 (2.95)
Confidentiality	I can keep secret accordingly	4.13 (0.77)
	I do not talk private issues of other people	3.81 (0.92)
	I don't gossip about a person's secret	3.69 (1.94)
	I act in accordance with known guidance	3.92 (0.68)
Total		15.56 (3.01)
Respectful	I greet my lecturer	4.20 (0.67)
	I always talk to senior, lecturer in polite tone	4.20 (0.64)
	I respect a person's decision	4.17 (0.60)
	I pay attention when the lecturer is giving lectures	3.76 (0.84)
	I can tolerate diversity	4.08 (0.69)
	I establish rapport with team members	4.03 (0.65)
Total		24.45 (3.11)
Responsibility	I try my best to do the task assigned	4.22 (0.60)
	I fix the mistake that I commit	4.04 (0.55)
	I prepare well before classes	2.97 (0.92)
	I am reliable	3.79 (0.72)
	I do not commit crime	4.13 (0.98)
	I never reject task that was assigned to me if I am capable of	3.99 (0.69)
Total		23.13 (2.91)

(*Continued*)

Table 2 (*Continued*)

Professionalism characteristics	Item	Mean (SD)
Compassion	I am considerate to other people	4.02 (0.60)
	I always reflect what I have done	3.96 (0.62)
	I always care about people	4.39 (0.43)
	I am willing to help people in need	4.15 (0.71)
Total		16.51 (4.85)
Communication	I can communicate well orally	3.74 (0.78)
	I can express my opinion as well	3.65 (0.80)
	I can use body language well if someone doesn't understand my language	3.83 (0.70)
	I can write well to the level of others understanding	3.82 (0.76)
	I allow talking without interruption	3.69 (0.77)
Total		18.75 (3.10)
Maturity	I think before making a decision	4.01 (0.66)
	I can manage relationships with others as well	3.90 (0.75)
	I am able to think critically	3.85 (0.68)
	I do my job in an organized method	3.81 (0.77)
	I can recognize and correct my mistake	3.97 (0.61)
	I am able to differentiate what is right and what is wrong	4.23 (0.61)
Total		23.77 (3.20)
Self-directed learning	I am able to learn independently	3.90 (0.88)
	I always try to improve myself	4.24 (0.74)
Total		8.13 (1.42)
	Grand total score	170.92 (19.08)

Abbreviation: UniSZA, Universiti Sultan Zainal Abidin.

Table 3 Comparison mean score of professionalism by medical students of UniSZA according to sex (n=144)

Professionalism characteristics	Mean (SD)		t statistic (*df*)	*P*-value[a]
	Male (n=54)	Female (n=90)		
Honesty	22.39 (3.69)	22.33 (3.26)	-0.055 (138)	0.956
Accountability	17.82 (2.70)	18.69 (3.12)	-1.811 (141)	0.72
Confidentiality	15.31 (2.28)	15.61 (3.42)	-0.620 (142)	0.531
Respectful	24.00 (3.09)	24.76 (3.14)	-1.316 (140)	0.190
Responsibility	22.35 (2.99)	23.58 (2.82)	-2.362 (141)	**0.020**
Compassion	15.76 (2.64)	16.99 (5.98)	-1.525 (142)	0.130
Communication	18.06 (3.28)	19.10 (3.00)	-1.935 (141)	0.055
Maturity	23.39 (3.66)	24.04 (2.85)	-1.160 (140)	0.248
Self-directed learning	7.88 (1.29)	8.24 (1.51)	-1.730 (142)	0.086
Grand total score	166.98 (20.15)	173.34 (18.09)	-1.891 (132)	0.61

Notes: [a]Independent *t*-test. Bold text denotes statistical significance.
Abbreviation: UniSZA, Universiti Sultan Zainal Abidin.

Table 4 Comparison of mean score of professionalism by medical students of UniSZA according to educational phase (n=144)

Professionalism characteristics	Mean (SD)		t statistic (*df*)	*P*-value[a]
	Preclinical (n=62)	Clinical (n=82)		
Honesty	22.67 (3.52)	22.11 (3.34)	0.916 (138)	0.361
Accountability	18.02 (2.48)	18.62 (3.31)	-1.302 (140.70)	0.195
Confidentiality	15.44 (3.47)	15.54 (2.67)	-0.304 (142)	0.762
Respectful	24.19 (3.25)	24.68 (3.04)	-1.196 (140)	0.234
Responsibility	23.33 (2.82)	23.14 (3.04)	-0.419 (141)	0.676
Compassion	16.36 (2.50)	16.64 (6.29)	-0.341 (142)	0.733
Communication	18.36 (3.39)	18.97 (2.93)	-1.350 (141)	0.179
Maturity	23.01 (3.42)	23.70 (3.01)	0.103 (140)	0.918
Self-directed learning	8.15 (1.41)	8.12 (1.45)	0.097 (142)	0.923
Grand total score	170.17 (18.67)	171.49 (19.49)	-0.394 (132)	0.694

Note: [a]Independent *t*-test.
Abbreviation: UniSZA, Universiti Sultan Zainal Abidin.

Table 5 Comparison mean scores of professionalism of medical students of UniSZA according to educational phase (n=144)

Professionalism characteristics	Mean (SD)					*t* statistic (*df*)	*P*-value
	Year I	Year II	Year III	Year IV	Year V		
Honesty[a]	22.70 (3.26)	22.65 (3.79)	21.57 (4.57)	21.96 (2.37)	22.62 (3.08)	3.093 (4)	0.542
Accountability[a]	17.70 (2.49)	18.29 (2.48)	19.24 (4.13)	18.23 (2.85)	18.52 (3.07)	4.532 (4)	0.339
Confidentiality[a]	15.56 (4.48)	15.35 (2.33)	15.57 (3.80)	15.62 (1.98)	15.45 (2.29)	2.051 (4)	0.726
Respectful[b]	23.96 (3.49)	24.39 (3.07)	25.29 (3.84)	24.42 (2.96)	24.48 (2.47)	0.851 (4,137)	0.495
Responsibility[b]	23.19 (3.09)	22.97 (2.61)	23.29 (4.05)	22.92 (2.51)	23.24 (2.63)	0.244 (4,138)	0.913
Compassion[b]	16.41 (2.39)	16.32 (2.63)	15.76 (2.39)	17.88 (10.44)	16.17 (1.58)	0.699 (4,139)	0.594
Communication[b]	18.59 (3.20)	18.16 (3.58)	19.29 (3.94)	18.50 (1.98)	19.17 (2.84)	0.911 (4, 138)	0.460
Maturity[b]	23.93 (3.58)	23.90 (3.33)	23.24 (4.00)	23.69 (2.45)	24.03 (2.69)	0.048 (4,137)	0.996
Self-directed learning[b]	8.30 (1.38)	8.00 (1.44)	7.86 (2.35)	8.08 (1.02)	8.24 (0.91)	0.185 (4, 139)	0.946
Total score[b]	170.33 (18.69)	170.03 (18.94)	171.10 (26.38)	171.31 (16.46)	171.93 (16.67)	0.045 (4,129)	0.996

Notes: [a]Kruskal–Wallis test. [b]One-way ANOVA.
Abbreviations: ANOVA, analysis of variance; UniSZA, Universiti Sultan Zainal Abidin.

Table 6 Comparison mean scores of professionalism of medical students of UniSZA according to grade of the examination result (n=144)

Professionalism characteristics	Mean (SD)							*t* statistic (df)	*P*-value
	A	B+	B	C+	C	Passed	Not stated		
Honesty[b]	20.67 (7.28)	23.33 (4.68)	22.88 (3.40)	22.17 (2.40)	22.75 (3.48)	19.71 (5.35)	22.48 (2.73)	0.785 (6,133)	0.58
Accountability[b]	18.83 (1.60)	20.67 (3.83)	19.50 (3.35)	18.00 (2.28)	17.08 (2.54)	17.14 (4.18)	18.25 (2.83)	1.678 (6,136)	1.13
Confidentiality[b]	14.00 (1.55)	15.67 (3.61)	14.94 (3.17)	15.17 (0.98)	15.83 (2.25)	13.43 (3.31)	15.86 (3.17)	1.307 (6,137)	0.26
Respectful[b]	25.00 (2.83)	25.83 (5.00)	26.19 (3.35)	23.17 (2.14)	23.83 (3.66)	22.14 (3.85)	23.38 (2.74)	2.163 (6,135)	**0.05**
Responsibility[b]	23.33 (3.50)	24.17 (3.31)	24.13 (3.36)	23.17 (0.98)	23.42 (1.98)	20.86 (4.53)	22.96 (2.80)	1.150 (6,136)	0.34
Compassion[a]	15.17 (4.67)	15.67 (0.52)	17.00 (2.39)	16.17 (2.14)	20.83 (15.00)	13.57 (3.26)	16.23 (1.80)	11.098 (6)	**0.04**
Communication[b]	17.67 (7.03)	21.33 (3.44)	19.75 (3.42)	19.00 (1.26)	18.25 (2.80)	16.86 (2.79)	18.59 (2.72)	1.454 (6,136)	0.20
Maturity[b]	25.00 (5.40)	24.50 (2.81)	23.69 (3.94)	23.17 (2.32)	23.67 (3.60)	21.00 (4.90)	23.98 (2.61)	1.771 (6,135)	0.11
Self-directed learning[a]	8.83 (1.33)	8.83 (0.98)	8.63 (1.36)	8.17 (1.33)	7.42 (1.24)	7.00 (1.53)	8.09 (1.45)	12.918 (6)	0.09
Total score[b]	168.50 (31.21)	180.00 (19.64)	176.69 (21.02)	168.17 (10.17)	173.08 (21.62)	151.71 (29.04)	170.83 (16.01)	1.776 (6,127)	0.11

Notes: [a]Kruskal–Wallis test. [b]One-way ANOVA. Bold text denotes statistical significance.
Abbreviations: ANOVA, analysis of variance; UniSZA, Universiti Sultan Zainal Abidin.

confident approach profession, skill, others, and not responded, respectively. The second question was "how professionalism should be taught", and 33% (48), 20% (28), 18% (26), 10% (15), and 19% (27) of the study participants thought that the answer was an experience, role model, formal education, others, and not responded, respectively. The third question was "how do you learn professionalism", and 27% (38), 22% (32), 8% (12), 26% (38), and 17% (24) of the study participants thought that the answer was a role model, experiences, formal education, others, and not responded, respectively. The fourth question was "how the professionalism should be assessed", and 24% (35), 13% (19), 3% (5), 38% (55), and 21% (30) of the study participants thought that the answer was attitude and job, performance feedback and self-reflection, formal education, others, and not responded, respectively.

Discussion

Medical doctors share a common professional standard and responsibility throughout the world, although there are enormous differences in culture and health care backgrounds.[105] However, globally, researchers, medical educators, and all concerns became highly apprehensive about medical professionalism because of many changes in health care in last few decades.[106–109] Multiple research internationally indicated that primarily, of advanced world, there have been many new issues are arising, those are challenging professionalism among medical doctors.[105,110,111] Every branch of medical doctors is facing a breach of their professional behavior leading to a negative impact on the society.[79] Therefore, internationally medical schools are giving much quality time and effort regarding teaching and curriculum design in order to generate educational atmospheres that will ensure professionalism.[110,112] Consequently, a group of researchers demanded that education regarding professionalism should start immediately as a developmental process.[113] Professionalism develops convention between the social order and physician. Hence, it is firmly anticipated that physicians will apply their professional knowledge and skill that will eventually benefit and give relief to patients.[10] Core values of professionalism have been evolved through the commonality of disease and healing process.

Disease process and healing share same pain and joy, whether a community is white, brown, or black.[105] The response rate of the students for this study was 87%, which is very similar to that of a Danish study.[114] In this study, female medical students were outnumbered by their male counterparts. This finding is analogous to that of a number of studies in many other countries.[115–118] Malaysia is mainly Malay predominant and a Muslim country. Therefore, the majority of the study population were Malay and Muslim (Table 1 and Figure 1).

There were no significant (P=0.61) differences between sexes of the mean scores of professionalism, although these came from different socioeconomic, educational, religious, and racial backgrounds (Table 3). In responsibility component, female students scored significantly (P=0.02) higher than their male counterpart (Table 3). This particular finding can be explained by the fact that females have more responsibility and empathy sense than males.[119,120] Moreover, the principal author started working in Malaysia in his 50s with 26 years of teaching experience and has personal feelings that Malaysian women have a higher responsibility sense than men. He had conducted a quick text message survey among local and expatriate colleagues, and all of them possess similar view that generally Malaysian women, are more responsible than men. Scores (166.98±20.15) in this study were somewhat lower among males than those of previous studies of Malaysia (172.31±13.39, 172.58±2.53, and 173.50)[91,93,94] and also of Bangladesh (178.51±15.69 and 176.21±9.42),[121,122] but scores of female medical students (173.34±18.09) in this study were almost similar to earlier Malaysian studies (174.58±17.95, 174.17±2.16, and 172.83)[91,93,94] but lower than Bangladeshi studies (175.33±8.99 and 177.90±15.70).[121,122] It is quite tough to explain why female medical students scored higher, but in this study, male participants were almost half of females. Consequently, it may influence because the disproportion between sexes may affect the result. Moreover, a similar observation was also noticed in a number of studies where male students had scored lower than their female counterpart.[91,94,121] Nevertheless, in two other studies, male students had better scores than female students.[93,122] A number of studies from modern world claimed that the core values of professionalism vary significantly with sex, year of study, and social, cultural, and educational environments.[123,124] Similarly, when compared between preclinical and clinical phases, there was no statistically (P=0.694) significant difference, although in this study, findings of preclinical (170.17±18.67) students were lower than the clinical medical (171.49±19.49) students (Table 4). This can be explained as with maturity and seniority, the sense of professionalism improved. Again, in this study, findings were lower than earlier studies (175.56±16.85, 175.63±2.46, 175.73±9.14, and 179.18±14.51) of Malaysia and Bangladesh both in respect of preclinical and clinical students.[91,93,121,122] Medical students of UniSZA scored almost similar, and there were no statistically (P=0.996) significant differences observed when compared between all 5 years (Table 5). Multiple studies reported that students' assertiveness headed for professionalism has a tendency to decline for the period of the years of training.[125,126] The current findings were not on the same line rather increases with the year of study, although with no statistically (P>0.05) significant differences observed. In the same way, medical students of UniSZA scored almost similar, and there were no statistically (P=0.11) significant differences observed when compared with their grades, obtained in the last examination (Table 6).

Overall scores have tended to be lower down from earlier studies; this is again tough to explain. This may be due to time as those studies were conducted 3–6 years before. Therefore, medical students' attitude toward all core issues of professionalism has changed. Nevertheless, scores almost similar to those of this study of all core issues of professionalism between different sexes, years of study, phases of study, and grades of respondents may denote a congenial, shared educational setting is working in this University. Intradepartmental and interdepartmental teamwork, livelihood, and mutual respect are very much needed for promoting the educational development rather than the competitive insolence.[127] Among the present study respondents, 48% and 22% thought that professionalism resembles positive attitudes toward the profession and skill, respectively (Table 7 and Figure 2). These data have similarity with earlier studies[76,94,124] but lower than some other studies.[91,94,121] Researchers recognized that professionalism is easy to identify but exceedingly challenging to define and poorly understood.[76,128] This is the place where faculty member must get in to make a rich understanding and prepare medical students to exercise on fundamental concerns of humanistic characteristics of professionalism. There should be vibrant harmony among the teachers in the development of professionalism among their students.[125] In the research participants, 33% and 19% thinks that professionalism should be taught with experience and role model, respectively. These findings were more or less similar to earlier studies.[91,94,121,122] Even though a number of studies concluded that professionalism is best learned from faculty role models, among the current study respondents, only one-fifth was in favor of role model.[124,125,129–131] The authors think that the respondents in this study were very young medical students who yet have not much exposed to real-life situation. Hence, due to lack of experience, they

Table 7 Respondents' opinion through open-ended questions

What do you mean by professionalism?		How professionalism should be taught?		How do you learn professionalism?		How professionalism should be assessed?	
Opinion	**n (%)**	**Opinion**	**n (%)**	**Opinion**	**n (%)**	**Opinion**	**n (%)**
Positive approach to profession	69 (47.9)	Experiences	48 (33.3)	Role model	38 (26.4)	Attitude and job performance	35 (24.3)
Skill	22 (15.3)	Role model	28 (19.4)	Experiences	32 (22.2)	Feedback and self-reflection	19 (13.2)
		Formal education	26 (18.1)	Formal education	12 (8.33)	Formal examination	5 (3.47)
Others	22 (15.3)	Others	15 (10.4)	Others	38 (26.4)	Others	55 (38.2)
Not responded	31 (21.5)	Not responded	27 (18.8)	Not responded	24 (16.7)	Not responded	30 (20.8)

Note: Others, not relevant answers.

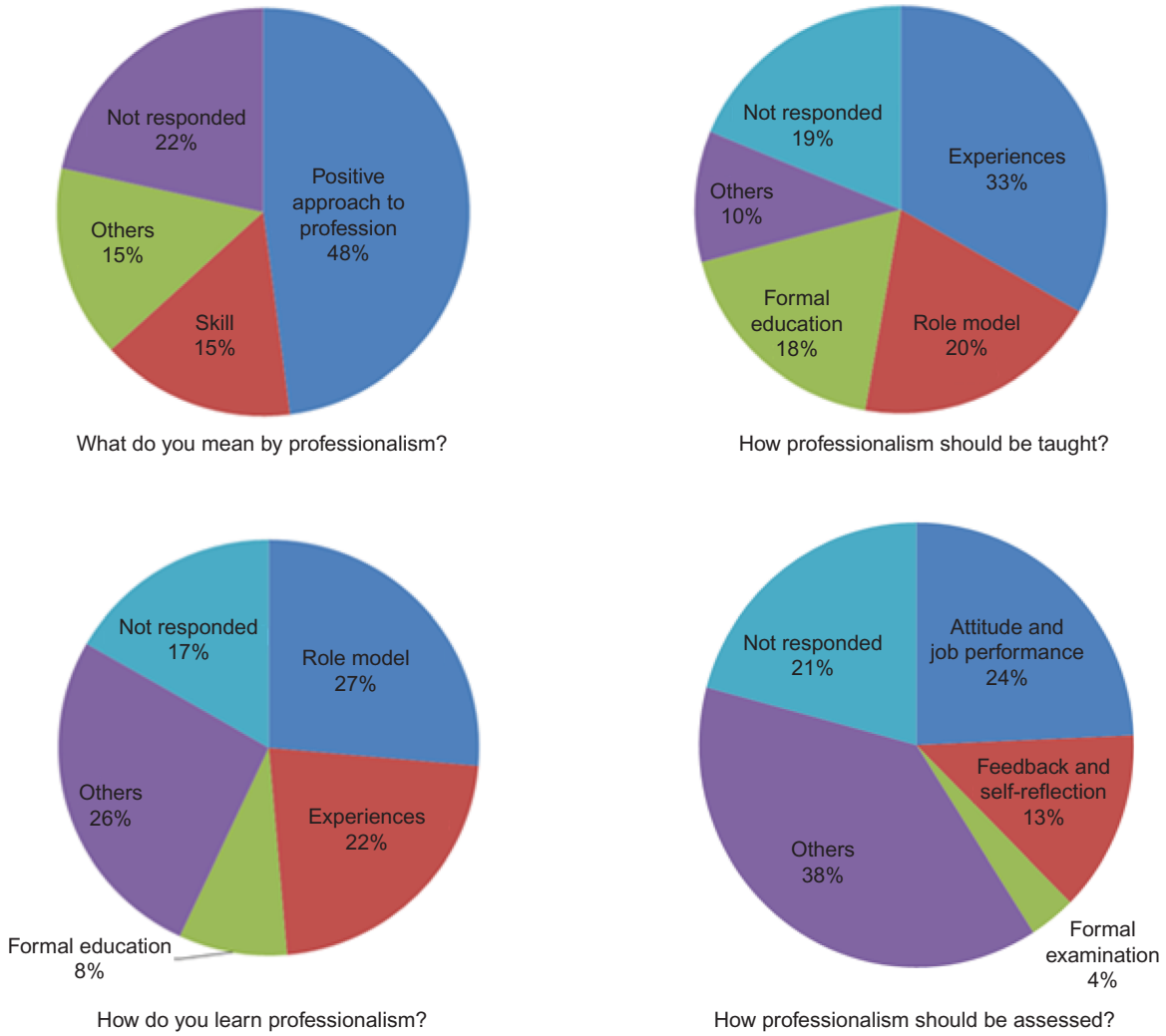

Figure 2 Respondents' opinion through open-ended questions.

were not aware of role model and professionalism. Moreover, 26%, 22%, and 8% of the respondents in this study thought that professionalism was best learned through role model, experiences, and formal education, respectively. These findings were quite similar to earlier studies.[94,121] Authors have an idea and believe that ordinary people anywhere in the world think that the role model is the hero and may be a war-hero or a football champion or a Nobel Laureate. As a result, authors have noticed that many parents have the desire deep in their heart and brain that their children will be like a role model. At the majority occasion, individuals also have the mind makeup to be famous like a role model. Then, the constructive role is

one of the best ways to develop and protect professional values, attitudes, and behaviors among the medical students and house officers.[132–134] Later, 24%, 13%, and 3% of the respondents in this study thought that professionalism assessed through attitude and job performance, feedback and self-reflection, and formal examination, respectively. The findings of this study were not consistent with the earlier studies.[91,93,94,121,122,133,134] On an average, 22.58% and 19.45% of the study respondents answer four open-ended question "others" and "not responded", respectively. "Others" mean that answers were not very pertinent or cannot be categorized. It seems that medical students of UniSZA were quite hesitant and slothful to answer open-ended questions. These findings were also relatively comparable with a few preceding studies.[121,122] However, these findings will hopefully contribute for the future development of Malaysian medical education and to the production of high-quality rational prescribers.

Limitation of the study

This is a cross-sectional study with its own inherent limitations. Therefore, this is the only snapshot of perception of professionalism of medical students of UniSZA. The sample size was small, even though 50% of the total population (300) was randomly selected, as UniSZA is a new medical school of Malaysia with an intake of only 60 students per year. Therefore, the findings in this study will only serve as baseline data for further in-depth study.

Conclusion

This study found almost similar levels of familiarity with all nine core fundamental issues of professionalism, with no statistically ($P>0.05$) significant differences between sexes, years of study, phases of study, and grades in the last examination. At least 21% of the respondents were oblivious about professionalism. The most important part to be noticed was that a good percentage of research respondents were naïve regarding role models and the development of professionalism. The education and improvement of professionalism have long been part of medical education and have had additional unique importance because of medical professionalism impinging on various new issues of health care policy and practice in the current century. Members of medical faculty should stress on the fundamental issues of professionalism, thus paving the way to the development of professionalism among medical doctors. Henceforth, researchers believe and expect that the country will produce more rational and holistic physicians for the ordinary people of Malaysia who will prescribe and treat patients on the basis of science.

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Disclosure

The authors report no conflicts of interest in this work.

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Supplementary materials

Date of data collection:

Dear respondents,

This evaluation form seeks information about your experience on professionalism. You don't need to write name or metric number that will reveal your identification. The information will be used just for research purpose. If you agree to participate in this study, just mention your sociodemographic attributes like year of study, gender and age as stated below and we expect your honest response.

A) Demographical questions

(Please round and give X in appropriate place)

1. **Sex**: Male/Female
2. **Date of Birth and Age**:
3. **Race**:
4. **Religion:**
5. **State**:
6. **Year of Study:** 1st/2nd/3rd/4th/5th. **Grade in Last Professional/Semester Exam** (If in Clinical Year Professional and Semester if Preclinical):

B) Please indicate your response by **ENCIRCLING 1=SD (Strongly Disagree); 2=D (Disagree); 3=U (Unsure); 4=A (Agree); 5=SA (Strongly Agree)** which most closely corresponds to your view against each statement.

Statement	SD	D	U	A	SA
1. Honesty					
1. I am fair to people	1	2	3	4	5
2. I am straightforward to people	1	2	3	4	5
3. I do not tell lies	1	2	3	4	5
4. I am truthful to people	1	2	3	4	5
5. I keep my promise	1	2	3	4	5
6. I admit mistake	1	2	3	4	5
2. Accountability					
1. I am punctual	1	2	3	4	5
2. I carry out my duty well	1	2	3	4	5
3. I inform supervisor/team when mistakes occur	1	2	3	4	5
4. I am a good leader	1	2	3	4	5
5. I complete assignment on time	1	2	3	4	5
3. Confidentiality					
1. I can keep secret accordingly	1	2	3	4	5
2. I do not talk private issues of other people	1	2	3	4	5
3. I don't gossip about people secret	1	2	3	4	5
4. I act in accordance with known guidance	1	2	3	4	5
4. Respectful					
1. I greet my lecturer	1	2	3	4	5
2. I always talk to senior, lecturer in polite tone	1	2	3	4	5
3. I respect people decision	1	2	3	4	5
4. I pay attention when the lecturer is giving lecture	1	2	3	4	5
5. I can tolerate diversity	1	2	3	4	5
6. I establish rapport with team members	1	2	3	4	5
5. Responsibility	**SD**	**D**	**U**	**A**	**SA**
1. I try my best to do the task assigned	1	2	3	4	5
2. I fix the mistake that I commit	1	2	3	4	5
3. I prepare well before classes	1	2	3	4	5
4. I am reliable	1	2	3	4	5
5. I do not commit crime	1	2	3	4	5
6. I never reject task that were assigned to me if I am capable of	1	2	3	4	5
6. Compassion					
1. I am considerate to other people	1	2	3	4	5
2. I always reflect what I have done	1	2	3	4	5
3. I always care about people	1	2	3	4	5
4. I am willing to help people in need	1	2	3	4	5
7. Communication					
1. I can communicate well orally	1	2	3	4	5
2. I can express my opinion well	1	2	3	4	5
3. I can use body language well if someone doesn't understand my language	1	2	3	4	5
4. I can write well to the level of others understanding	1	2	3	4	5
5. I allow to talk without interruption	1	2	3	4	5
8. Maturity					
1. I think before making decision	1	2	3	4	5
2. I can manage relationship with others well	1	2	3	4	5
3. I am able to think critically	1	2	3	4	5
4. I do my job in an organized method	1	2	3	4	5
5. I can recognize and correct my mistake	1	2	3	4	5
6. I am able to differentiate what is right and what is wrong	1	2	3	4	5
9. Self-directed Learning					
1. I am able to learn independently	1	2	3	4	5
2. I always try to improve myself	1	2	3	4	5

Abbreviations: SD, strongly disagree; D, disagree; U, undecided; A, agree; SA, strongly agree.

Figure S1 (*Continued*)

C) Open ended questions

What do you mean by professionalism?.....

How should professionalism be taught? .....

How do you learn professionalism? .....

How should professionalism be assessed? .....

Figure S1 Questionnaire on Fundamental Elements of Professionalism.
Note: Reproduced from Salam et al., 2012a[1] and 2012b[2] with permission.

Table S1 Grading Scheme for MBBS Programme, UniSZA

Marks Awarded	Grade	Meaning
75 and above *(subject to viva voce)	A+	Distinction
70 and above	A	Very good pass
65– 69	B+	Good pass
60– 64	B	Good pass
55– 59	C+	Pass
50– 54	C	Pass
50 **(For Viva-Voce)	-	Redeemable Failure
0– 49	***F	Fail
0	F/X	Barred from exam
0	F/TH	Absent from exam (without valid reason)
0	X/TK	Absent from exam (with valid reason)

Notes: *Applicable for professional (PRO) Examination only: a student who obtains 75 and above shall be called for a viva voce and if the student passes the viva voce, the grade shall be upgraded to A+. **Applicable for PRO II Examination only: a student who obtained total marks of >50% and theory marks of 45%–49.4% shall be called for viva-voce and if the student passes the vivavoce, the student shall be awarded with grade C. ***Applicable for end of clinical posting (EOP) and PRO II Examination: a student who failed in clinical component shall be given grade F.

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