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Research Article

COMPARATIVE STUDY OF PROFESSIONALISM OF FUTURE MEDICAL PROFESSIONALS AMONG THREE PRIVATE MEDICAL COLLEGES OF BANGLADESH

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ABSTRACT

Objectives: Medical professionalism forms the bridge between doctors and society. Conserving and maintaining professionalism is obligatory for physicians' curriculum. The objective of this study was to scrutinize and compare the professionalism of future medical professionals among different medical institutes. **Methodology:** It was a cross-sectional study conducted on 332 Year-III and Year-IV MBBS students of session 2012-2013 from three private medical colleges in Bangladesh. Data was collected using a mixed validated instrument containing items under fundamental elements of professionalism, measured by 5-points Likert scale giving a maximum score of 220. **Results:** Among 332 respondents, 44% were male, 56% female; Year-III respondents constituted 51% and Year-IV constituted 49%. Mean professionalism scores for male and female were 176.21 and 175.33, while for Year-III and Year-IV were 174.96 and 176.50 respectively. No significant differences observed between gender and year of study. However, significant differences were noticed between Year-IV male students among three medical colleges. Majority (83%) students were imprecise of professionalism. **Conclusions:** Lack of focus is a worry for professionalism. Educators should focus on fundamental elements of professionalism.

Keywords: Professionalism, Medical-student, Core-values, Comparisons, Bangladesh.

INTRODUCTION

Professionalism in medicine is an equivocal word and regarded through numerous diverse lenses, for over the years the word "professionalism" has taken on different encumbered significance [1]. Defining professions and professionalism has been a current and argumentative concern that has earned the apprehension of social scientists throughout the eons [2]. Society and patients believe doctors must be professional hence they expect doctors must have high quality of education and acquire necessary skill and will do everything to give them comfort. Therefore patients have full trust on doctors [3-6]. Cognoscenti think professionalism is at the core of the menace management in multifaceted, dangerous drudgery such as medicine, aviation, and military operations. Therefore, closely connected to expertise to halt and alleviate solecisms [7]. Professional is not the inborn social characteristics of physician [1]. Many intellects believe safeguarding and upholding professionalism in medicine is obligatory for physician [8-10]. Medical professionalism forms the basis of the ties between doctors and society and thus professionalism should be dominantly present in undergraduate medical curriculum [11, 12]. Physicians at many occasion is in emergency situation in fast-paced and erratic surroundings in which communication and professional conduct are vital [13]. Additionally, as the Society for Academic Emergency Medicine's ethics team detected, in the emergency department (ED) patients are often helpless, necessitating emergency doctors to have "enhanced ethical duties, moral requirements and social contracts" [14]. Furthermore, recent condemnation on the topic of unprofessional activities in medicine, quite a lot of claims that improving medical professionalism can only through modifications in instruction and evaluating professionalism [15, 16]. The medical curricular reforms become a major question in developed countries as because of current challenges to professionalism among physicians [17-20]. A number of researcher perceive that undergraduate medical teachers have an scholastic and community Obligation to guarantee that their graduates own the qualities of professionalism obligatory for working as holistic medical doctor [21, 22]. Teaching and assessment of professionalism are compulsory by the Accreditation Council for Graduate Medical Education (ACGME), and many scholarly writings suggested that educational strategies should be incorporated in the curriculum to teach professionalism [14, 23-30]. Professionalism remains noteworthy educational challenge [31] and no mediations have been empirically established to raise erudition in professionalism [32].

Professionalism is "a philosophy, a behavioural disposition, and a skill set that result from one of the fundamental relationships in human interaction" [33]. Medical professionalism defined by scholars as "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 community being served" [34]. Moreover, there has been growing publicity currently about errors and negligence of doctors, both hospital doctors and general practitioners (GP) [35]. As professionalism is a dominant principal quality and remains in the center for healthcare professional [36-39]. Professional capabilities are frowningly imperative for medical students to acquire very properly hence to become good doctors for the community and again much attention is obligatory to confirm this ethical binding is delivered to each new group of medical students [40-42]. Therefore, presently much effort has been dedicated for the better understanding and development of professionalism among the medical students in their schooling time and practice [15, 16, 43-49]. As there is no strong agreement between professional groups how to define and measure medical professionalism henceforth teaching professionalism in healthcare remain as an esoteric mission [50, 51]. However, 'medical professionalism' still remains a confusing word [52-56]. The battle to outline this wide-ranging, nonfigurative idea of

professionalism is admitted in the existing healthcare professionalism in many scholarly scientific writings [53, 57-59]. The teaching of ethics and professionalism at all stages of medical education has acknowledged by many authorities and academics [60-63]. The teaching and evaluation of ethics is an accreditation standard for undergraduate and postgraduate medical training in Canada [64-65]. Medical professionalism is a core competency and a prerequisite to do medical practice in USA as it is professed by the ACGME [25, 66]. Globally, medical professionalism is moving towards new era [67-72]. Moreover, the medical professionalism is challenged by advances in technology, varying market forces, managed care, other business arrangements in health care, bioterrorism, globalization and a rising sense of the attrition of public trust in the medical profession [46, 73]. Importance of patient choice, issues of authority and the changing nature of professional knowledge, additionally the refutation of old philosophies of undisputed 'autonomy' and 'privilege', are transforming the doctor-patient relationship and stimulating discussions about the perception of professionalism [74].

Bangladesh currently has a population approaching 150 million [75]. It is estimated that by July 2013 it will be over 163 million [76]. Bangladesh has presently 22 state-owned medical college and 54 private medical colleges. Total 8700 students are admitted each academic year in theses colleges. In government colleges, intake is around 2900 students and in private, around 5800 [77]. Hence it can be easily assume that around 5000 new medical graduate will be added to the existing list of doctors for a country of having over 160 million populations. Furthermore, prescribing behaviours of the medical graduates depends upon how and what they have been taught and trained about drugs during their undergraduate course [78]. Medical students should be helped to learn how to choose drugs appropriately for prescribing [79-83]. Moreover, medical students are future doctors thus they will be exposing very soon to a situation where there is virtually no frontiers between medicine and drug industry [84-89]. Physician's knowledge about pharmacological facts is mostly based on drug advertisement rather than scientific literature. They perceive information in advertisement equally as valuable as other contents of the Medical Journal [90, 91]. Moreover, it is reported that US pharmaceutical industries spends nearing 60 billion dollars per annum for marketing for their product to physicians including residents [92]. American pharmaceutical industry people visited annually over 60 million for promoting their products [89, 93]. Moreover, the 2011 Accreditation Council for Continuing Medical Education (ACCME) annual report data shows that industry support for CME dropped by 11.4 percent, which equates to almost $94 million less spent on CME in 2011 than in 2010 [94].

Industry representatives while visiting physician promotes their product [95-102] and which influences physician to write that particular brand [103-107]. Researchers find at many occasion physicians are not following national or hospital guidelines [90, 108, 109, 110] and rather prescribing due patient demand due direct-to-consumer advertising in lay media, or drug samples, at many times that particular drug was not doctor's first choice and poly-pharmacy [111, 112, 113]. These interactions lead to increase number of formulary without any distinct advantage over prevailing one [105, 114] medically inappropriate, prescribing more expensive proprietaries, and economically inefficient [114-118]. Guidelines writers often have clandestine relations with industry [119]. Medical doctor in many scholarly literature repeatedly disagree the unhealthy relations and influence aggressive promotional of pharmaceutical industry for selection of the medicine [90, 114, 120-124]. But malpractice of the scientific literature through ghostwriting continues in medical field due to the colossal earnings for all interested party and issue has gone up to US court [125, 126]. Probably these are reasons why many advance countries has adopted professionalism as a part of formal curriculum in medicine [127, 128]. These situations are globally existing and more marked in developing countries including Bangladesh [118]. Bangladesh currently following curriculum [129] has no formal programme for the development of professionalism in students; intern or medical doctors. The objective of this effort is to ascertain and compare the conceptual understanding of professionalism with importance on the core issues among the medical students of Bangladesh aimed at professional development programme to be incorporated in the curriculum. Thus medical students will develop immunity to prevent all such odds when they are qualified and work in the community.

MATERIALS AND METHODS

This was a cross-sectional study conducted on medical students of EMC, Central Medical College (CMC), and AK-Modern Medical College (AKMMC) in Bangladesh. The study population was all of Year-III and Year-IV (348) medical students of academic session 2012/2013. The sample size consisted of 332 students. Among the sample, 133, 93 and 106 were from EMC, CMC and AKMMC Medical Colleges respectively. These medical colleges are affiliated with public university. EMC and CMC affiliated with the University of Chittagong and AKMMC with University of Dhaka. EMC and CMC situated at Comilla and AKMMC at Dhaka. All three medical colleges are designated as private institute but under strict supervision of Government of Bangladesh. Convenient sampling technique was used to select the sample. The period of study was December 2012 to January 2013. Data was collected using a mixed validated instrument [130, 131] which contained nine core elements of professionalism qualities such as honesty, accountability, confidentiality, respectfulness, responsibility, compassion, communication, maturity, and self-directed learning. There were a range of statements under each professionalism elements which was measured by 5-point Likert scale giving a maximum score of 220. Mean of all nine characteristics' 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 learnt professionalism and how professionalism should be assessed. The data was then complied and analysed using SPSS version-20 using independent T test and One-Way ANOVA test.

RESULTS

Among 348 total study populations from year-III and IV, 332 were responded giving a response rate of over 95%. Of these 332 participants 169 (51%) were from Year-III and 163 (49%) were from year-IV; 133, 93, and 106 participants were from EMC, CMC, and AKMMC respectively. Males were 147 (44%) and females were 185 (56%). Year-III male students were 75 (44%) and female students were 94 (56%). Year-IV male were 72 (44%) and female were 91 (56%). Mean professionalism score of male respondents was 176.21 and female was 175.33. Mean professionalism score of Year-III respondents was 174.96 and Year-IV was 176.50. There has no significant difference between gender (p=0.386) and study year (p=0.127) in the total scores of core elements of professionalism with independent T test (Table 1). Table 2 showed the distribution of mean professionalism score of Year-III male (p=0.367) and female (p=0.743) students in terms of its core elements among the respondents of different medical colleges found no significant differences with one way ANOVA test. Table 3 revealed the distribution of mean professionalism score of Year-IV students in terms of its core elements among the respondents of different medical colleges. There were significant differences of total value regarding fundamental elements of professionalism between EMC, CMC, and AKMMC among Year-IV male students (p=0.02) but not in females (p=0.178) with one way ANOVA test.

Table 1: Comparison of Mean Value of Fundamental Elements of Professionalism between Male and Female and Year-III and Year-IV Students

Elements of Professionalism	Mean value (SD) Male (147)	Female (185)	t statistic (df)	*p* value	Mean value (SD) Year-III (169)	Year-IV (163)	t statistic (df)	*p* value
Honesty	24.86 (2.21)	24.91 (2.14)	-0.213 (330)	0.832	25.05 (2.06)	24.71 (2.26)	1.439 (330)	0.151
Accountability	19.76 (3.00)	19.45 (3.09)	0.893 (330)	0.373	19.56 (2.92)	19.62 (3.20)	-0.189 (330)	0.850
Confidentiality	16.91 (2.16)	17.02 (2.34)	-0.440 (330)	0.660	17.02 (2.25)	16.93 (2.28)	0.368 (330)	0.713
Respectful	24.75 (2.57)	24.96 (2.48)	-0.748 (330)	0.455	24.73 (2.50)	25.00 (2.54)	-0.963 (330)	0.336
Responsibility	23.12 (3.65)	22.61 (3.32)	1.335 (330)	0.183	21.91 (3.35)	23.80 (3.35)	-5.134 (330)	<0.001
Compassion	16.56 (1.73)	16.71 (1.78)	-0.767 (330)	0.443	16.74 (1.77)	16.55 (1.74)	0.973 (330)	0.331
Communication	18.32 (2.17)	18.32 (2.42)	-0.018 (330)	0.986	18.37 (2.25)	18.28 (2.38)	0.358 (330)	0.721
Maturity	23.23 (3.17)	22.76 (3.04)	1.387 (330)	0.166	22.92 (3.22)	23.02 (2.99)	-0.297 (330)	0.767
Self-directed learning	8.70 (1.20)	8.58 (1.31)	0.837 (330)	0.403	8.67 (1.29)	8.60 (1.24)	0.485 (330)	0.628
Total Scores	176.21 (9.42)	175.33 (8.99)	0.868 (330)	0.386	174.96 (9.71)	176.50 (8.56)	-1.530 (330)	0.127

***Independent T test**

Table 2: Comparison of Mean Value of Fundamental Elements of Professionalism among Year-III Male and Female Students of Different Colleges

Elements of Professionalism	Year-III Male Mean value (SD) EMC (32)	CMC (18)	AKMMC (25)	*F* statistic	*p* value	Year-III Female Mean value (SD) EMC (35)	CMC (29)	AKMMC (30)	*F* statistic	*p* value
Honesty	25.53 (1.90)	24.94 (2.01)	24.40 (2.29)	2.120	0.127	24.94 (2.03)	25.14 (2.15)	25.20 (2.02)	0.139	0.870
Accountability	19.72 (2.89)	19.06 (2.60)	19.44 (2.57)	0.345	0.709	19.43 (3.21)	20.03 (3.04)	19.47 (3.07)	0.359	0.699
Confidentiality	16.97 (2.57)	17.17 (1.69)	16.88 (2.28)	0.095	0.909	16.40 (2.53)	17.10 (2.40)	17.73 (1.95)	2.687	0.073
Respectful	24.03 (2.65)	24.56 (2.96)	25.20 (2.08)	1.470	0.237	25.29 (2.01)	24.38 (2.88)	24.90 (2.45)	1.090	0.341
Responsibility	20.41 (2.67)	22.06 (3.62)	23.36 (3.09)	6.628	0.002	22.49 (3.54)	21.62 (3.45)	21.83 (3.27)	0.564	0.571
Compassion	16.22 (1.58)	16.83 (1.79)	16.44 (1.83)	0.738	0.481	16.49 (1.85)	17.24 (1.70)	17.30 (1.71)	2.192	0.118
Communication	18.19 (2.06)	18.50 (2.68)	18.28 (1.67)	0.127	0.881	18.51 (2.34)	18.52 (2.31)	18.23 (2.54)	0.142	0.868
Maturity	22.47 (3.04)	23.94 (3.72)	23.16 (3.46)	1.136	0.327	22.83 (2.92)	22.48 (3.44)	23.10 (3.08)	0.287	0.751
Self-directed Learning	8.97 (1.06)	8.67 (1.46)	8.52 (1.05)	1.103	0.337	8.23 (1.50)	8.93 (1.25)	8.73 (1.31)	2.286	0.107
Total Scores	172.50 (11.09)	175.72 (10.83)	175.68 (5.92)	1.016	0.367	174.60 (11.47)	175.45(11.08)	176.50 (5.79)	0.299	0.743

***One-way ANOVA test**

Table 3: Comparison of Mean Value of Fundamental Elements of Professionalism among Year-IV Male and Female Students of Different Colleges

Elements of Professionalism	Year-IV Male Mean value (SD) EMC (28)	CMC (20)	AKMMC (24)	*F* statistic	*p* value	Year-IV Female Mean value (SD) EMC (38)	CMC (26)	AKMMC (27)	*F* statistic	*p* value
Honesty	25.43 (2.10)	24.00 (2.43)	24.42 (2.32)	2.586	0.083	25.36 (2.10)	24.27 (2.18)	24.41 (2.37)	1.962	0.147
Accountability	19.61 (3.78)	21.40 (1.76)	19.46 (3.43)	2.434	0.095	19.63 (2.91)	18.46 (3.52)	19.56 (2.90)	1.263	0.288
Confidentiality	16.96 (2.12)	16.55 (2.46)	16.92 (2.21)	0.223	0.800	16.74 (2.46)	17.08 (2.17)	17.30 (2.35)	0.468	0.628
Respectful	24.46 (2.66)	25.70 (2.41)	24.92 (2.54)	1.374	0.260	24.63 (2.55)	25.85 (2.38)	24.81 (2.56)	1.960	0.147
Responsibility	23.14 (3.76)	26.00 (2.27)	24.88 (3.54)	4.489	0.015	22.32 (3.50)	23.31 (2.53)	24.44 (2.72)	3.914	0.024
Compassion	16.36 (1.81)	17.60 (1.67)	16.33 (1.52)	4.028	0.022	16.26 (1.84)	16.77 (1.58)	16.37 (1.76)	0.679	0.510
Communication	18.21 (1.85)	19.45 (2.67)	17.58 (2.08)	4.090	0.021	17.95 (2.07)	17.81 (2.59)	19.00 (2.76)	1.988	0.143
Maturity	22.64 (3.17)	24.75 (2.25)	23.21 (2.98)	3.229	0.046	22.26 (2.85)	23.15 (2.91)	22.89 (3.25)	0.758	0.472
Self-directed learning	8.61 (1.42)	8.50 (0.89)	8.83 (1.31)	0.414	0.663	8.55 (1.31)	8.50 (1.21)	8.63 (1.21)	0.072	0.930
Total Scores	175.43 (8.56)	183.95 (9.18)	176.54 (6.80)	7.003	0.02	173.61 (8.59)	175.19 (8.29)	177.41 (6.95)	1.762	0.178

***One-way ANOVA test**

Table 4 revealed the comparison of mean value of fundamental elements of professionalism between year-III and year-IV students of different colleges regardless of gender. Year-III students regardless of gender were not significant (p=0.320) but significant differences found in students of Year-IV (p=0.016) with one way ANOVA test.

Table 5 revealed the comparison of mean value of fundamental elements of professionalism between males and females of CMC. Only significant differences between genders (p=0.03) in CMC was observed with independent T test.

Table 4: Comparison of Mean Value of Fundamental Elements of Professionalism among Year-III and Year-IV Students of Different Colleges Regardless of Gender

Elements of Professionalism	Year-III Mean value (SD)			*F* statistic	*p* value	Year-IV Mean value (SD)			*F* statistic	*p* value
	EMC (67)	CMC (47)	AKMMC (55)			EMC (66)	CMC (46)	AKMMC (51)		
Honesty	25.22 (1.98)	25.06 (2.08)	24.84 (2.17)	0.531	0.589	25.33 (2.09)	24.15 (2.27)	24.41 (2.33)	4.535	0.012
Accountability	19.57 (3.04)	19.66 (2.89)	19.45 (2.83)	0.063	0.939	19.62 (3.28)	19.74 (3.22)	19.51 (3.13)	0.062	0.940
Confidentiality	16.67 (2.41)	17.13 (2.13)	17.35 (2.13)	1.439	0.240	16.83 (2.30)	16.85 (2.29)	17.12 (2.27)	0.260	0.772
Respectful	24.69 (2.40)	24.45 (2.88)	25.04 (2.28)	0.721	0.488	24.56 (2.58)	25.78 (2.37)	24.86 (2.52)	3.343	0.038
Responsibility	21.49 (3.31)	21.79 (3.48)	22.53 (3.25)	1.496	0.227	22.67 (3.61)	24.48 (2.75)	24.65 (3.11)	6.828	0.001
Compassion	16.36 (1.72)	17.09 (1.73)	16.91 (1.80)	2.769	0.066	16.30 (1.81)	17.13 (1.66)	16.35 (1.64)	3.654	0.028
Communication	18.36 (2.20)	18.51 (2.43)	18.25 (2.17)	0.164	0.849	18.06 (1.97)	18.52 (2.72)	18.33 (2.54)	0.529	0.590
Maturity	22.66 (2.96)	23.04 (3.58)	23.13 (3.23)	0.370	0.691	22.42 (2.97)	23.85 (2.73)	23.04 (3.10)	3.164	0.045
Self-directed learning	8.58 (1.35)	8.83 (1.32)	8.64 (1.19)	0.532	0.558	8.58 (1.35)	8.50 (1.07)	8.73 (1.25)	0.420	0.658
Total Scores	173.60 (11.25)	175.55 (10.87)	176. 13 (5.81)	1.147	0.320	174.38 (8.56)	179.00 (9.64)	177.00 (6.82)	4.239	0.016

***One-way ANOVA test**

Table 5: Comparison of Mean Value of Fundamental Elements of Professionalism between Males and Females of CMC

Elements of Professionalism	Mean value (SD)		*t* statistic (df)	*p* value*
	Male (38)	Female (55)		
Honesty	24.45 (2.26)	24.73 (2.19)	-0.598 (91)	0.551
Accountability	20.29 (2.47)	19.29 (3.34)	1.656 (91)	0.101
Confidentiality	16.84 (2.13)	17.09 (2.27)	-0.533 (91)	0.595
Respectful	25.16 (2.71)	25.07 (2.73)	0.148 (91)	0.882
Responsibility	24.13 (3.56)	22.42 (3.14)	2.451 (91)	0.016
Compassion	17.24 (1.75)	17.02 (1.65)	0.613 (91)	0.541
Communication	19.00 (2.68)	18.18 (2.45)	1.523 (91)	0.131
Maturity	24.37 (3.02)	22.80 (3.19)	2.383 (91)	0.019
Self-directed learning	8.58 (1.18)	8.73 (1.24)	-0.579 (91)	0.564
Total Scores	180.05 (10.70)	175.33 (9.77)	2.205 (91)	0.030

***Independent T test**

Study result with open-ended question on what professionalism is meant to the study sample, how it should be taught, how they learnt and how professionalism should be assessed are shown (Table 6). Unfortunately on average with all four open-ended questions 83% of students did not answers. Only 48 (15%) student expressed professionalism as positive attitude and behaviour towards job. Again only 10 (3%) thinks professionalism should be taught by experience, rest 22 (7%), 15 (5%) opined through education and role model respectively (Table 6). Eighteen (5%), 8 (2%), 29 (9%) students feel professionalism should be learned by experience, education and role model respectively (Table 6). Only 32 (10%) students opted for professionalism should be assessed by formal examination, rest 11 (3%) students thinks for feedback.

Table 6: Respondent's 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	48	15	Experience	10	3	Experience	18	5	Formal Exam	32	10
Others	9	3	Education	22	7	Education	8	2	Feedback	11	3
Not Responded	275	83	Role Model	15	5	Role Model	29	9	Others	9	3
			Others	7	2	Others	7	2	Not Responded	280	84
			Not Responded	278	84	Not Responded	270	81			
Total	332	100	Total	332	100	Total	332	100	Total	332	100

DISCUSSION

At this time 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 [20]. As because globally specially in advance world there has been many new issues are raising those are challenging professionalism among medical doctors [17-19]. Professionalism develops convention between the social order and physician. Hence, it is firmly anticipated that physician's will apply their professional knowledge and skill that will eventually benefit and give relief to patients [34]. Every branches of medical doctor is facing a breach in their professional behaviour leading to negative impact in the society. Therefore, education regarding professionalism should start immediately as formative process [132]. Physicians are facing disciplinary action quite regularly by the authority because of "violations of law governing the practice of medicine" [133]. Hence, researcher believes the motorway to professionalism should be started from the early years of the medical school and remains all the way through a physicians' profession [134]. Medical education in United Kingdom till 1970s did not incorporate professionalism, ethics, and humanism in their curriculum [135]. Nevertheless almost all medical schools now officially give much attention for development of professionalism in USA and UK as a part of their curriculum [127, 128].

The current study was about group of medical students of Year-III and Year-IV of three private medical colleges of Bangladesh. The number of female students is little higher than male students. This observation is much similar with study done at UKM and UniSZA at Malaysia [130, 131, 136]. This study population belongs to three different medical colleges and city, with definitely different socioeconomic and cultural background. Even then, there was no significant (p=0.386) difference between gender in total scores of core elements of professionalism such as honesty, accountability, confidentiality, respectful, responsibility, compassion, communication, maturity, self-directed learning which corresponds with studies of Malaysia [130, 131, 136]. The female scores (175.33) is slightly less than male (176.21) students (Table 1). This finding has similarities with the study done in Kuala Lumpur at UKM Medical Centre [131] but dissimilarities with other studies of Malaysia [130, 135]. There was also no significant (p=0.127) differences between Year-III (174.96) and Year-IV (176.50) (Table 1). This is also quite similar with earlier studies [130, 131, 136]. There has been a report from West Virginia University School of Medicine that different socio-economic background, cultural, gender and study year has profound influence on the scores of professionalism and lead to significantly vary [137]. But this study does not come to an agreement with work done at Virginia, USA. Rather Bangladeshi medical undergraduate students shows very close figure. Growth of the professionalism has a greatly influenced by the educational environment [138]. As there is very neck to neck scores of professionalism between gender and study-years of the medical students in the present effort may possibly designates an amiable, mutually respected educational background is functioning in these colleges. This can be explained as because Bangladesh has unique curriculum for whole country and strictly controlled by ministry of health [129]. Over 50 years it is believed by scholars that medical education is interdepartmental teaching is absolutely important thus suggested cooperation between department and within department will enhance and quality of education environment as it will improve joint effort, livelihood and reciprocal admiration which are much required for upholding educational development rather than envious impertinence [139-141]. Various studies reported as medical students get senior there were declining tendency of scores for core elements of professionalism [142-143]. Current study does not correspond with above studies [142-143]. Instead of declining there is little increase of scores but with no significant (p=0.127) difference between Year-III (174.96) and Year-IV (176.50) (Table 1).

Although this study could not find any significant differences between Year-III males and females when analysed using one way ANOVA test (Table 2) but mean value of CMC males (175.72) and AKMMC females (176.50) have little higher score than other two colleges. This finding is different from study done in USA [137]. Again present study able to detect significant difference with Year-IV males and this finding corresponds with other research [137]. Although among Year-IV girls there was no significant difference but AKMMC female have little higher score (177.41) than rest (Table 3). There were no significant difference between Year-III students regardless of gender but with little higher scored by AKMMC (176. 13) (Table 4). Nevertheless significant differences found in students of Year-IV (Table 4). Year-IV students finding corresponds with study done at Virginia, USA [137]. There were no significant differences between genders among colleges with only exception found in CMC. CMC is significantly different in scores observed among male and female (Table 5). This finding corresponds with one study [137].

Only 48 (15%) students were found to have positive attitudes towards their service. Rest 275 (83%) did not responded to the question "What do you mean by Professionalism?" (Table 6). Current study does not correspond with many studies [59, 130, 131, 136] which might predict that the study population has lacked of proper knowledge on professionalism. Researchers in this regard believe that professionalism is easy to ascertain but awfully challenging to outline and poorly assumed [50, 59]. This is the right time to make a collective-effort by academic faculties should be made for development of professionalism to make the clear understanding about professionalism and to organise medical students on the principal concerns of humanistic values of professionalism [142].

Medical professionalism conventionally believed as the basic quality for every individual graduate medical doctor. Archetypally, professionalism perceived as a concoction of values, knowledge and skill, integrity and good judgment in an individual. The doctor–patient relationship is considered as fundamental, but customarily has been understood paternalistically. There is a common set of unspoken and obvious agreements between patients, physicians, and civilization is existing and this act as foundation of whole medical profession. A social convention that defines this sensitive profession controls what each stakeholder anticipates from other [144]. Medical education must ensure better health care for each and every of this earth and this is the principal motto of World Federation of Medical Education (WFEM) [145]. Again appropriate practices of medical professionalism forms the backbone of the bondage between medical doctors and society and therefore it is imperative that professionalism must incorporated into all the undergraduate curriculum [11, 12] like that of devolved countries [127, 128]. Accordingly, medical lecturers can contribute as central protagonist force for facilitating the development of future medical doctors' proficiency [146, 147]. Webster's Ninth New Collegiate Dictionary defines charisma as "a personal magic of leadership arousing special popular loyalty or enthusiasm for a public figure." It is well known students at many occasion are fascinated with their charismatic teachers which act as role model. There is a vast stimulus is acting on students for copying their teachers for development of professionalism [148-151]. This is one of the major age old ways of learning professionalism in medical schools throughout the world. Among our study population, unfortunately only 15 (5%) thinks that professionalism taught through role model (Table 6). Again 84% of students did not respond. Three to 7% student thinks professionalism is taught through experience and education respectively (Table 6). Several scientists' observation is that professionalism is best learned from academy as they believe those academic faculties perform as the best role model [45, 130, 131, 138, 142, 148-154]. Bangladeshi respondents are much different from Malaysian medical students [130, 131, 136] in regarding role model. Again in present work in contrary to so many studies, only 29 (9%) believe from role model they learn professionalism. A total of 81% student did not respond (Table 6). Total 8 (2%) and 18 (5%) thinks they learn professionalism through education and experience respectively (Table 6). Common people think role models are the people with very high qualities like noble laureate. Parents always expect that their children will be like those who have high degree of name and fame. Not only parents, individuals also have the desire deep in their heart and brain to be like role models. Hence, positive role models are one of the best ways to immunize professional values, attitudes, and behaviours in

medical students and residents [127, 155]. Positive role model is the much easy way to develop professional values, skills, attitude, and behaviour by replicating their academic faculties [156]. Bangladeshi medical students seem to be quite lazy to answer open ended questions. It may be possible that they are not good in expressing in English language and also in writing skill, or have fear or shy to express themselves to their academic faculties. Thus 83% (Table 6) of them did not respond all four open ended questions. Quite a good number of research papers concluded that medical school curriculum should incorporate professionalism to ensure physician's responsibilities and commitment to their patients, to the profession, and obviously to the society [11, 12, 127, 157]. In contrary to these studies [11, 12, 127, 157], in the present study only 22 (7%) and 8 (2%) think professionalism should be taught and learned through formal education respectively. Among our respondents, only 32 (10%) think professionalism should be assessed through formal examination (Table 6). This finding also does not correspond with studies [130, 131, 136]. Again 84% students of this study did not respond which indicated that there is a lack of focus in professionalism.

In these days professionalism issues has been a highest concern in medical schools both developed and developing countries. Hence, legislative bodies have recognised professionalism as core qualifications for medical doctor. Society believes that practice of good habit or behaviour should be started or groomed from childhood. Once bad habit has developed it is very difficult to rectify and to develop good habit. Hence, researchers recommended that professionalism must teach as a part of formal curriculum for medical doctor.

LIMITATION OF THE STUDY

This is a cross sectional study thus has its own limitations. Therefore this work is confined to a specific point in time. Henceforth provide us with a snapshot, not a video picture of a sample of a population. Since population characteristics constantly change over time, prospective longitudinal studies can provide more accurate information. Therefore, well designed prospective longitudinal study is suggested in this issue of highest concern for medical doctor. Therefore Bangladesh will have more community oriented holistic medical doctor who will ensure health of the common people of country based on science and humanity not on biased information.

CONCLUSIONS

The present study found almost similar level of understanding on core fundamental concerns of professionalism with no significant differences between gender and years of study among the three medical colleges in Bangladesh. Around 83% of the study populations were unaware about professionalism including role models which indicate that there is a lack of focus in professionalism. Educators should focus on fundamental elements of professionalism. Hence, the country urgently needs to create role models in medical schools and should focus on the fundamental elements of professionalism in order to promote professional characteristics of future medical professionals who are with extensive knowledge of science, technology and to manage crisis whatever he or she encounters.

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