

Final year medical students and professionalism: lessons from six Sudanese medical schools?

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Background: Medical students as future professionals must reflect the trust the public places in the medical profession. This study aimed to assess the level of professional knowledge and attitude among final year medical students, their opinion on the current courses of professionalism and the impact of some socioeconomic factors on their professional thinking.

Methods: This descriptive cross-sectional study was conducted in six Sudanese Medical Schools in Khartoum State, Sudan in the period from January to April 2017. A total of 675 final year medical students enrolled in the academic year 2016–2017 were selected using systematic sampling technique (response rate was 99.8%). Data were collected using a validated self-administrated questionnaire consisted of four sections.

Results: Participants' mean age was 22.13 (± 1.61) (range, 18–30) years and 425 (63%) were females. Six hundred sixty-six (98.8%) of the medical students disclosed that medical professionalism and ethics are taught in their schools. In the knowledge section: 3 questions answered correctly by >90% of the responders, 5 questions were answered correctly by 70–90% of the responders. Therefore, Sudanese medical students achieved satisfactory knowledge about professionalism. Sudanese medical students have an excellent attitude towards non-judgemental and non-discriminatory approach (87.4%), community protection (81.5%) and readiness to serve rural areas (social accountability) (87.7%). Importantly, 79.4% of medical students answered 'yes' for the presence of a psychology course in the curricula.

Conclusions: The level of professional knowledge of the studied final-year medical students is very good and this combined with excellent attitudes in community protection, readiness to serve rural areas and most importantly non-judgemental and non-discriminatory approach.

Keywords: Professionalism; ethics; knowledge; attitude; behaviour; medical students; curriculum

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Introduction

The Royal College of Physicians described professionalism as “a set of values, behaviours, and relationships that underpins the trust the public has in doctors”. Professionalism is one of six core competencies that physicians-in-training must have before graduating (1). As indicated by the “Doctor Charter,” there are three “major standards” and ten “expert obligations” that portray demonstrable skill. The standards are supremacy of patient welfare, independence and social equity (2,3), while, the professional responsibilities include commitment to competence, honesty, confidentiality, appropriate relations with patients, improving quality and access to care, fair distribution of resources, scientific knowledge, maintaining trust, and refuting conflicts of interests (1). A framework for professionalism has been proposed by Arnold and Stern (4). Clinical competence, effective communication skills, and a sound understanding of ethics form the foundation of the framework. The pillars of the framework are accountability, altruism, excellence, and humanism (5). Professionalism is associated with improved medical outcomes (5). Among students, there are many dishonest behaviours and lapses in the academic integrity (6). It is noticed that the issue of autonomy can easily be misunderstood. So, teaching of professionalism is important not only for undergraduate students but also for residents and specialist (7). In the UK the medical curricula were based on the document “Tomorrows Doctors” in which communication skills are the main issue besides the clinical excellence (8). Similarly, the Canadian medical curricula (The CanMed) characterizes the graduate medical students as, Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional (9).

Historically, it has been assumed that ethics and professionalism can be gained through apprenticeship (10). Nevertheless, the emerging inappropriate behaviours, violations in professionalism and financial conflicts of interest (11-15) has fostered health care institutions, medical societies, and accrediting organizations to encourage teaching, assessing, and promoting professionalism. Teaching professionalism leads to positive modifications in students’ attitudes from 48% to 84%. This is associated with a statistically significant difference in pre/post-test conducted in first year students (16). Also, integration of medical ethics, human rights, professionalism and university requirements lessons within the curriculum of the medical schools is recommended (17).

The Sudan Medical Council (SMC) has exerted a lot of

efforts to promote the culture of professionalism among the healthcare providers and has designed two courses for ethics and professionalism to be introduced in the medical curricula for undergraduates (10,18). Recently, the international trend and emphasis is notion that the undergraduate medical curriculum should contain courses about social sciences, behavioural sciences and professionalism. Therefore, the aim of this study was to assess the level of professional knowledge and attitude among final year medical students in different types of Sudanese Medical Schools in the capital Khartoum.

Methods

Study design and set up

This was a descriptive cross-sectional study conducted in the period from January to April 2017. The study was conducted in medical schools located in Khartoum State that has graduated at least five batches (12 medical schools were identified—4 public and 8 private medical schools). Systematic sampling of medical schools resulted in the selection of two public (University of Khartoum, Omdurman Islamic University) and four private medical schools: (Ahfad University for Women, University of Science and Technology, Alwatania University and the National Ribat University). We have only selected final year medical students registered in the academic year 2016–2017 in the above-mentioned medical schools to participate in this study. They were consented to fill the questionnaire.

Sampling technique and sample size calculation

Systematic sampling technique for odd numbers of the students’ the school records were done for selecting students. The required sample size was obtained using the formula:

$$N = \frac{N}{1 + N(d)^2} \quad [1]$$

where: n, is sample size; N, is the total number of students enrolled in the academic year 2016/2017 in the final year in the six medical schools; d, is the degree of accuracy required and set to 0.05.

$$n = \frac{1,431}{1 + 1,431(0.05)^2} \quad [2]$$

n=304. This was the minimum required representative sample size. The actual number of final year students enrolled in the study was 675.

Table 1 Socio-demographic characteristics of the studied final year medical students

Characteristic	Category	n (%)
Nationality	Sudanese	638 (94.9)
	Non-Sudanese	34 (5.1)
Residence during study	Live with family	376 (56.0)
	Live with relatives	69 (10.3)
	student in hostels	114 (17.0)
	Live in private residence	112 (16.7)
Stay during the previous 10 years	Outside Sudan	202 (30.7)
	In side Sudan	457 (69.3)
Type of admission	Public	274 (41.0)
	Private	345 (51.6)
	Others	49 (7.3)

Table 2 The perception of final year students on the curriculum of medical professionalism in their schools

The question	Yes, n (%)	No, n (%)
Professionalism are taught in medical school	666 (98.8)	8 (1.2)
Professionalism is taught as separate course?	562 (83.3)	104 (15.4)
Number of courses taught on professionalism		
One	395 (58.5)	
Two	169 (25.0)	
Others	101 (14.0)	
The course in professionalism is sufficient	407 (60.3)	169 (25.0)
Presence of psychology course?	536 (79.4)	114 (16.9)

Data collection, management and analysis

The data were collected by a self-administrated, semi-structured questionnaire consisted of four sections. Section one on socio-demographic issues. Section two on the curriculum of ethics and professionalism in the related medical school. Section three and four about knowledge and attitude. The questionnaire has been face validated (>7.5/10) and pretested by pilot study. For assessment of

knowledge and attitude we used percentage of the total correct response. The collected data were analysed using the Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics and percentages were calculated.

Ethical clearance

Ethical approval was obtained from the Ethical Review Board of the Faculty of Medicine, University of Khartoum. Permission from each medical school was obtained. Written informed consent was obtained from students following the insurance of confidentiality of their data. Students were asked not to write their names. In a meeting with the students, a short brief about the study was provided with emphasis on confidentiality, free choice contribution and self-dependent questionnaire filling. The selected students signed agreement sheet and were asked to fill in the questionnaire anonymously. Serial numbers were used for entering data in the SPSS.

Results

Socio-demographic characteristics and general information

The age of respondents ranged from 18–30 years with a mean (\pm SD) of 22.13 (\pm 1.61) years, 63% of them were females. Out of them 672 (94.9%) were of Sudanese nationality. *Table 1* shows the type of their residential places during the study years in Khartoum State. However, 202 (30.7%) lived outside Sudan for more than 10 years of their life (*Table 1*).

The perception of final year students on the curriculum of medical professionalism and ethics in their schools

Almost 666 (98.8%) of the medical students disclosed that medical professionalism and ethics are taught in their schools, 562 (83.3%) reported that it is taught in a separate course while 104 (15.4%) mentioned that it is incorporated within other courses. About 395 (58.5%), 169 (25.0%), and 32 (4.7%) of the students perceive that the number of courses is 1, 2 and 3, respectively. Nearly 407 (60.3%) of the respondents perceive that the course contents are enough, 169 (25.0%) were not satisfied with the course contents, 90 (13.3%) were not sure about that, in 6 (0.9%) the question is not applicable, while 3 (0.4%) did not respond. There were 536 (79.4%) of the students who answered 'yes' for the presence of a psychology course (*Table 2*).

Table 3 Knowledge of final year medical students about professionalism

Stem	True, n (%)	False, n (%)	Not sure, n (%)
Respect for staff and colleagues helps patients' respect	649 (96.3)	11 (1.6)	14 (2.1)
Punctuality is a professional behaviour	582 (86.4)	77 (11.4)	15 (2.2)
Decent dress increases others' respect	639 (95.9)	9 (1.4)	18 (2.7)
Talking to others with smiling face expressions is a profession attitude	593 (89.0)	34 (5.1)	39 (5.9)
Autonomy is patients' right in accepting medical decisions	530 (79.5)	15 (2.2)	122 (18.3)
Non-maleficence is doing no more harm	392 (59.4)	53 (8.0)	215 (32.6)
Beneficence means excellent performance	508 (76.3)	55 (8.3)	103 (15.5)
Breaking patient's confidentiality is acceptable if there is a risk for others or community	477 (71.5)	139 (20.8)	51 (7.6)
Reporting communicable diseases is not considered breaking of patient's confidentiality	611 (91.2)	44 (6.6)	15 (2.2)

Table 4 Perception of final year medical students on professional attitude

Item	Agree, (%)	Neutral, (%)	Disagree, (%)
Accepting gift from patients	73 (10.9)	83 (12.3)	517 (76.9)
Doing an operation based on husband's consent only	169 (25.2)	103 (15.3)	400 (59.5)
Postponing breaking bad news if patient known to have depression or psychological problems	167 (24.9)	72 (10.7)	433 (63.5)
Letting a patient with contiguous diseases back work without being completely cured	67 (10.0)	57 (8.5)	547 (81.5)
Suggesting changing the job for a hair dresser/barber with positive HIV/AIDS	123 (18.4)	52 (7.7)	497 (73.9)
Refusing to treat enemies in hot lines	43 (6.4)	42 (6.3)	576 (87.4)
Stop working in the causality because of deficient work facilities and logistics	383 (56.9)	102 (15.2)	188 (28.0)
Working in PHC centres as part of social accountability	589 (87.7)	52 (7.7)	31 (4.6)

HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome; PHC, primary health care.

Knowledge of final year medical schools about medical professionalism and ethics

A total of 647 (96.3%) students, admitted that respect of teachers and colleagues leads to patients' respect and 582 (86.4%) looked at punctuality as an important professional behaviour. Also, 639 (95.9%) students thought that the good general formal dress increases the respect of others towards them as professionals, and 593 (89.0%) agreed that talking to others with smiley faces is considered a professional behaviour. The concept of patient autonomy was known by 530 (79.5%) of the students. The term non-maleficence was correctly recognized by 392 (59.4%), but 215 (32.6%) were not sure of the meaning of this terminology. The concept of beneficence was known by 508 (76.3%) and missed by 103 (15.5%) students. The information that breaking patient's confidentiality is allowed if there is a risk to a third party

is recalled by 477 (71.5%) and 51 (7.6%) were not certain about that. On the other hand, 611 (91.2%) students didn't consider that reporting communicable diseases as a break of patient's confidentiality while 44 (6.6%) did (*Table 3*). In the knowledge section out of the nine questions: 3 questions answered correctly by >90% of the responders, 5 questions were answered correctly by 70–90 of the responders. Therefore, Sudanese medical students achieved satisfactory knowledge about professionalism.

The professional attitude and behaviour of the final year medical students

The students' responses towards certain scenarios that they may encounter in their professional life were assessed. Most of the students (76.9%) reflected that they would not agree to accept a gift from any patient (*Table 4*). Regarding

taking consent for treating an adult female and whether the written informed consent should be signed by her husband, this dilemma was gained approval of 25.6% while 59.5% disagree. Importantly, 63.5% agreed that to break bad news to their patients as long as they have capacity irrespective of their depression and psychological status. Questions about protecting community from infectious disease and isolating patients with infectious disease was correctly answered by more than 80% of the respondents. The dilemma of stop working with low resources and less doctor covers in emergency medicine gained approval of 56.9% while 28% disagree. Questions about whether doctor will have judgemental approach and discriminate against his patients when he delivers treatment, 87.4% of medical students agreed to treat even their enemies in front line. Lack of essential working aids in the casualty as a driving cause for concern was agreed upon by 56.9% but, was disagreed upon by 28.0% of the students. Social responsibility question (working in primary health care centres in rural areas) was answered correctly by 87.7% (*Table 4*). Therefore, it is possible to conclude that Sudanese medical students have an excellent attitude towards non-judgemental and non-discriminatory approach, community protection and readiness to serve rural areas.

Discussion

In this study, there is female predominance. Different studies showed different representation of males and females in medical schools around the world. For example, undergraduate female medical students represent 43% at public (19) and 47.5% at private medical schools in Karachi, Pakistan (20). In Taiwan, there were nearly four times as many males as females with ratio: 3.73:1 (21). Nearly two thirds of the study participants were living in Sudan for the last 10 years, the rest live with their families abroad. Even though professionalism can be taught, the person must have the inherent timbers that form the basis of professionalism (1). In this study, professionalism and ethics are taught in a separate course in the majority of the medical schools. Importantly, the level of knowledge on professionalism and ethics is high in this study compared with other studies such as reported in 2012 in medical schools in Khartoum (22). This may be attributed to the increased awareness about professionalism in general and to the wide introduction of courses of professionalism and ethics in the curricula of medical schools fostered by the SMC. However, basic terminologies of professionalism

need to be explained to medical students. For examples, terms like: confidentiality, non-maleficence, beneficence, and autonomy were correctly known by 50%, 59%, 76% and 80% of the respondents, respectively.

In this study the final year medical students do respect punctuality as a professional behaviour and higher than doctors being 86.4% and 78.7% (23). This may reflect that the current curriculum in professionalism may improve the knowledge of participants, however, it may not impress individual attitudes (24). The importance of teaching professionalism by role models, simulations, role plays or case-based scenarios is emphasised (19). Teaching professionalism in the proper way will ensure that students obtain an adequate professional preparation that is well aligned with their future practice setting to support them to properly deal with the ethical dilemmas that they will come across in clinical practice (25). Furthermore, attitudes towards professionalism in medicine were found significantly different between graduate (doctors) and undergraduate medical students (26). Interestingly, graduate entry students showed better attitudes towards various aspects of professionalism, relative to undergraduate students, in a study done in University College Cork, Ireland (27).

Gift-giving is one of the most difficult ethical issues in medical professionalism for the undergraduates to understand. Maintaining appropriate professional limits and at the same time having the flexibility to respond with warmth and appreciation is a great challenge to the clinicians (28). Majority of participants in this study will decline to receive gift from their patients. Should the doctor accept gifts from patients? Some completely decline it so as not to violate physician's fidelity to the patient; as they think that there are other more meaningful ways to express gratitude (29). On the other hand, Takayama reported the Japanese tradition of a gift giving (30). Nevertheless, some issues such as the purpose of the gift, its value to the patient, the anticipated outcome of accepting or refusing it have to be considered (28). Not only patient-doctor but also student-patient relationships need to be determined (31).

The issues raised in UK by the case of Dr. Bawa-Garba paediatric trainee accepted to work in emergency paediatric unit which was understaff and associated with failure of computer system, have caused worldwide concern. She accepted to work in these circumstances but she was later accused of gross negligence and manslaughter of one of her patients (after many years of legal battles she won an appeal to work again) (32). Therefore, it is not surprising that more

than half (56.9%) of the Sudanese tomorrow doctors will stop working at the casualty if the hospital administrative failed to provide the essential aids and facilities for performing their daily duties. The study also showed another social and important issue that 25% respondent agree to operate in females after consent obtained from their husbands. This can be attributed to different factors like: the high level of illiteracy among women in rural areas, the cultural structure of Sudanese community that men should lead negotiation and it can also be a source of pride for majority of women that her husband is caring for her in all aspects of her life. The study also showed that Sudanese medical students have an excellent attitude towards non-judgemental and non-discriminatory approach (87.4%), community protection (81.5%) and readiness to serve rural areas (social accountability) (87.7%). This in part can be attributed to the fact that majority of the medical schools included in this study adopted and transferred significant parts of the curriculum of Faculty of Medicine, University of Gezira (FMUG), Sudan. The curriculum of FMUG is well known to be community oriented and problem-based learning. It worth mentioning that FMUG is one of leading medical schools in social accountability and medical education (33-37).

One of the limitations of this study is the cross-sectional design of the study. Another limitation of the study is the fact that caution is needed about generalization of all the findings of this study to all medical schools in Sudan, as the study was conducted only in the capital Khartoum. Despite these limitations, our study reflected great improvement in professionalism among medical students after the great effort of SMC to promote the culture of professionalism among the healthcare providers.

Conclusions

The level of professional knowledge of the studied final-year medical students is very good and this combined with excellent attitudes in community protection, readiness to serve rural areas and most importantly non-judgemental and non-discriminatory approach. Professionalism can be sensibly taught in medical schools as long as open discussion are allowed to take place about different social factors. In the era of new technologies, Sudanese medical students are not isolated and international events related to medical professionalism may have an influence in their future approach to patient care.

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References

- Riley S, Kumar N. Teaching medical professionalism. *Clin Med* 2012;12:9-11.
- Foundation A, Foundation A-A. Medical professionalism in the new millennium: a physician charter. *Obstet Gynaecol* 2002;100:170-2.
- Blank L, Kimball H, McDonald W, et al. Medical professionalism in the new millennium: a physician charter 15 months later. *Ann Intern Med* 2003;138:839-41.
- Stern DT. A framework for measuring professionalism. *Measuring medical professionalism* 2006:3-14.
- Mueller PS. Teaching and assessing professionalism in medical learners and practicing physicians. *Rambam Maimonides Med J* 2015;6:e0011.
- Shukr I, Roff S. Prevalence of lapses in academic integrity in two Pakistani medical colleges. *Med Teach* 2015;37:470-5.
- Villanueva LA, Collado Pena S. [Attitudes and hierarchy of medical values in a gynecology and obstetrics department]. *Ginecol Obstet Mex* 2004;72:273-8.
- Davis CR, Toll EC, Bates AS, et al. Surgical and procedural skills training at medical school - a national review. *Int J Surg* 2014;12:877-82.
- Albanese MA, Mejicano G, Mullan P, et al. Defining characteristics of educational competencies. *Med Educ* 2008;42:248-55.
- Karrar ZA. Professionalism and good medical practice: the role of Sudan Medical Council. *Sudan Med J* 2009;45:1-4.
- Brennan MD, Monson V. Professionalism: good for patients and health care organizations. *Mayo Clin Proc* 2014;89:644-52.
- Morrison J, Wickersham P. Physicians disciplined by a state medical board. *JAMA* 1998;279:1889-93.
- Greysen SR, Chretien KC, Kind T, et al. Physician violations of online professionalism and disciplinary actions: a national survey of state medical boards. *JAMA* 2012;307:1141-2.
- Campbell EG, Gruen RL, Mountford J, et al. A national survey of physician-industry relationships. *N Engl J Med* 2007;356:1742-50.
- Campbell EG, Regan S, Gruen RL, et al. Professionalism in medicine: results of a national survey of physicians. *Ann Intern Med* 2007;147:795-802.
- Elcin M, Odabasi O, Gokler B, et al. Developing and evaluating professionalism. *Med Teach* 2006;28:36-9.
- Ibnouf M, Mardi T, Hag M, et al. Prospective Randomised Controlled Trial of Teaching Medical Students Behavioural Sciences. *Sudan J Med Sci* 2007;7:189-95.
- Inaam N. Mohamed ZAK. Evaluation of teaching professionalism in undergraduate medical curricula - Sudan: situational analysis. *Khartoum Med J* 2018;11:1454-9.
- Akhund S, Shaikh ZA, Ali SA. Attitudes of Pakistani and Pakistani heritage medical students regarding professionalism at a medical college in Karachi, Pakistan. *BMC Res Notes* 2014;7:150.
- Sobani ZU, Mohyuddin MM, Farooq F, et al. Professionalism in medical students at a private medical college in Karachi, Pakistan. *J Pak Med Assoc* 2013;63:935-9.
- Tsai TC, Lin CH, Harasym PH, et al. Students' perception on medical professionalism: the psychometric perspective. *Med Teach* 2007;29:128-34.
- Imam JA, El Kheir DY. Assessment of the concepts of medical professionalism among medical students. *Khartoum Med J* 2014;7.
- Doumi EA. Awareness and practice of the basic medical ethics among doctors at El Obeid Hospital, Western Sudan. *Sudan Med J* 2014;50.
- Hultman CS, Halvorson EG, Kaye D, et al. Sometimes you can't make it on your own: the impact of a professionalism curriculum on the attitudes, knowledge, and behaviors of an academic plastic surgery practice. *J Surg Res* 2013;180:8-14.
- Hudon A, Laliberte M, Hunt M, et al. What place for ethics? An overview of ethics teaching in occupational therapy and physiotherapy programs in Canada. *Disabil Rehabil* 2014;36:775-80.
- Hultman CS, Wagner IJ. Professionalism in plastic surgery: attitudes, knowledge, and behaviors in medical students compared to surgeons in training and practice-one, but not the same. *Ann Plast Surg* 2015;74 Suppl 4:S247-54.
- O'Flynn S, Power S, Horgan M, et al. Attitudes towards professionalism in graduate and non-graduate entrants to

- medical school. *Educ Health (Abingdon)* 2014;27:200-4.
28. Brendel DH, Chu J, Radden J, et al. The price of a gift: an approach to receiving gifts from patients in psychiatric practice. *Harv Rev Psychiatry* 2007;15:43-51.
29. Weijer C. Point-counterpoint: should physicians accept gifts from their patients? No: Gifts debase the true value of care. *West J Med* 2001;175:77.
30. Takayama JL. Giving and receiving gifts: one perspective. *West J Med* 2001;175:138-9.
31. Alamri YA. Gift-giving in the medical student--patient relationship. *J Med Ethics* 2012;38:506-7.

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