

*Original Article***Prospective Randomised Controlled Trial of Teaching Medical Students Behavioural Sciences**

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Abstract

Background: In the last few decades, medical professionalism came up as a challenging issue to teach and assess.

Objective: To compare the level of understanding of the medical professionalism, medical ethics and human rights among the first year and fifth year medical students at Omdurman Islamic University in Sudan.

Methods: Prospective randomised controlled trial. Students were randomized in to four groups during teaching of behavioural sciences which was given at different spectra in the different groups. Responders were 365(91.25%), they were 143(39.2%) first year males, 141(38.6%) first year females split in two groups and 81(22.2%) fifth year mixed male and female. Conceptual understanding of medical ethics, professionalism, human rights and the religion values as part of the university requirement were assessed with a pretested questionnaire.

Results: Of the fifth year students 69(86.3%) were able to describe triggering organisational help for patients as an advocacy and 119(83.2%) first year male students were able to identify that availing medical facilities to the disabled and the vulnerable groups as basic human right. The majority (>90%) of all students were described well professional integrity and 132(93%) of first year medical students were able mention correctly the differences between the Healer and the professional and 83(58.5%) of fifth year students specified the confidentiality issue in taking informed consent, respectively. However, the students' categorised the regulation of organ transplantation and tissue engineering has human rights followed by Religion Teachings bases.

Conclusion: Teaching medical ethics, human rights, professionalism and University requirements to the first year medical students and gains during the practical experience of the clinical clerkship have a considerable impact on the student perception of these subjects. Gains are expected to improve if these issues are integrated in all areas of the curriculum.

Key words: Professionalism, Human rights, Medical ethics, medical students

Worldwide teaching medical ethics is based on the principals of Hippocrates Auth. In 1948 United Nation General assembly issued the Human Rights Declaration and plead the member countries to disseminate it through the teaching institutions. Since then thousands of conflicts and plenty of humans have been

marginalised, tortured and lives were lost, yet, medical colleges do not teach this declaration. In the last two decades medical professionalism gained momentum to bind the integrity and social responsibility of the medical professionals. Both medical ethics and issues in professionalism were derived from the divine teachings or manmade of good values. In Sudan, universities teach the so called "University Requirements" composed of religious teachings. Yet, all these subjects are poorly integrated within the medical knowledge, skills and behaviour. In the curriculum of the Faculty of Medicine and Health Science at Omdurman Islamic

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University, Sudan, throughout the last five years, Medical ethics, the Human Rights Declaration and Human Rights in Islam are taught in the first two semesters. In the last two years Professionalism was introduced in the same semesters. Also, senior students are expected to acquire good professional behaviour from their role model teachers during the clerkship training. Curricula may not cover the issue of medical professionalism properly¹. Therefore, the study was designed to evaluate the students' gains in this field.

Objectives:

- 1-To compare the level of understanding of the medical professionalism, medical ethics and human rights among the four groups of medical students.
- 2-To test the impact of student collaboration on understanding issues of professionalism.
- 3-To assess the impact of teaching humanities on the student understanding of professionalism.

Methodology:

Type of study: Descriptive, qualitative prospective randomised study carried out in the academic year 2011/2012.

Set up: The Faculty of Medicine and Health Science (FMHS) established in 1989 in Omdurman Islamic University (OIU) which started in 1902 as Omdurman Scientific Religious Institute. The University is constituted of 19 Faculties, four institutes and five branches. Up to date FMHS has 4739 graduates. The curriculum is hybrid in its third round of curriculum development.

Population of the Study: A total of 365 first and fifth year medical students were approached to participate in the study and to respond to pre-tested questionnaire in the study. The students responded to pre-tested designed questionnaire.

Sampling method: A stratified sampling method was used constituted of four arms as follows:

- 1-The first arm comprised of the first year male students
- 2-The second arm comprised of the first year

female students as individual responders

3-The third arm comprised of the first year female students as group unanimous responders

4-The fourth arm comprised of the fifth year mixed males and female students.

Characteristics of the participant samples:

1-Students in the first arm were first year male students. They have studied medical ethics, University Requirements (Islamic religion studies), "The Human Rights Declaration", "Human Rights in Islam" and "Principals of Professionalism"

2-The first year female students have been taught medical ethics and University Requirements only. They were divided into two groups according to the way they respond either as individuals (Second arm) or after collaborating in discussion till they reach unanimous response (Third arm).

3-Students in the fourth arm were the fifth year students who had studied medical ethics, University Requirements (Islamic religion studies), "The Human Rights Declaration", "Human Rights in Islam". They gained practical experience gained from their role model teachers in hospitals during the clinical clerkship.

The data collection tool: A self-administered questionnaire was designed and tested to assess the ability to differentiate the principal of professionalism, medical ethics, human rights and Islamic religion values. The statements cover professionalism (Question 7, 8,10), beneficence, maleficence (Question 2), advocacy (Question 4, 6) and self integrity (Question 5), Human rights (Question 3). In addition four questions cover test medical ethical behaviour (Question 9) Islamic religion values (Question 1).

Statistical analysis: Data was fed to Statistical Package for Social Science (SPSS) for Windows version 20.0. Frequencies were calculated and χ^2 correlations were computed. $P < 0.05$ was regarded significant.

Results:

A total of 400 questionnaires were distributed

but 365 were retrieved (response rate 91.25%). They were 143(39.2%) first year males, 141(38.6%), first year females and 81(22.2%) fifth year mixed males and females. The student perceptions on doctors

who seek organisational support for patients (Advocacy) are shown in table 1. The student description of the doctor's integrity in his/her personal image, punctuality and honesty is shown in table 2. Opinions on the differences

Table 1: Student responses in categorizing the role of the professional who seek organisational support for patients (Advocacy). $P = 0.0000$

Class	Perception of the doctor who seek organisational support for patients					Total
	Advocate	Sympathetic	Transparent	Dedicated	Don't know	
First limb	112(78.9%)	7(4.9%)	8(5.6%)	12(8.5%)	3(2.1%)	142(100.0%)
Second limb	34(55.7%)	1(1.6%)	5(8.2%)	12(19.7%)	9(14.8%)	61(100.0%)
Third limb	48(60.0%)	2(2.5%)	7(8.8%)	17(21.3%)	6(7.5%)	80(100.0%)
Forth limb	69(86.3%)	4(5.0%)	4(5.0%)	2(2.5%)	1(1.3%)	80(100.0%)
Total	263(72.5%)	14(3.9%)	24(6.6%)	43(11.8%)	19(5.2%)	363(100.0%)

Table 2: Students responses in categorizing personal Image with truthfulness and trustfulness (Integrity). $P = 0.0236$

Class	Doctors personal image with truthfulness and trustfulness					Total
	Beneficience	Advocacy	Self integrity	Empathy	Don't know	
First limb	4(2.8%)	1(.7%)	131(91.6%)	6(4.2%)	1(.7%)	143(100.0%)
Second limb	1(1.6%)	1(1.6%)	55(90.2%)	1(1.6%)	3(4.9%)	61(100.0%)
Third limb	1(1.3%)	1(1.3%)	76(95.0%)	0(.0%)	2(2.5%)	80(100.0%)
Forth limb	3(3.8%)	1(1.3%)	75(94.9%)	0(.0%)	0(.0%)	79(100.0%)
Total	9(2.5%)	4(1.1%)	337(92.8%)	7(1.9%)	6(1.7%)	363(100.0%)

Table 3: Student responses in categorizing differences between the Doctor and the Healer. $P = 0.0000$

The Difference between the Doctor and the Healer	Class				Total
	First limb	Second limb	third limb	forth limb	
The doctor is trustful	6(4.2%)	28(48.3%)	44(57.1%)	14(17.3%)	92(25.7%)
The doctor is truthful	1(.7%)	3(5.2%)	0(.0%)	0(.0%)	4(1.1%)
The doctor is punctual	0(.0%)	0(.0%)	1(1.3%)	0(.0%)	1(.3%)
The doctor is honourable	3(2.1%)	1(1.7%)	1(1.3%)	0(.0%)	5(1.4%)
The doctor is long life learner and works in group	132(93.0%)	26(44.8%)	31(40.3%)	67(82.7%)	256(71.5%)
Total	142(100.0%)	58(100.0%)	77(100.0%)	81(100.0%)	358(100.0%)

between the medical doctor and the local healer are entered in table 3.

Also, students' judgments on some aspects of confidentiality such as retrieving information

and taking consent were plotted in Fig 1. Student perceptions on protecting oneself as well as preventing harm from others depicted in Fig 2 and 3. Moreover, judgement for

patient autonomy, respecting others and availing access for medical facilities for the disabled (the poor, marginalized, orphans, street children etc.) was illustrated in fig 4. In addition the students have different opinions on governing the contemporary issues on organ transplantation and genetic modulation and tissue engineering as shown in table 4.

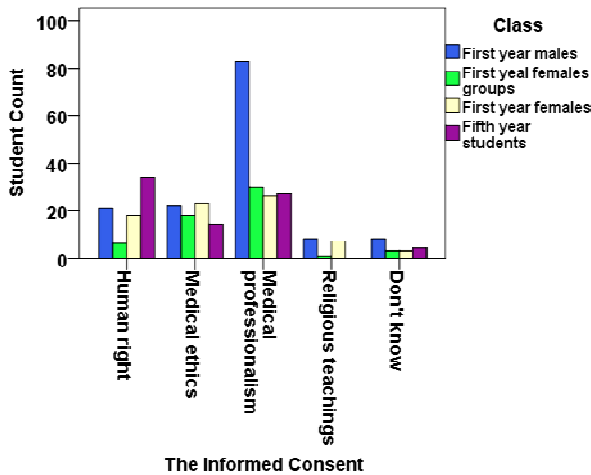


Fig1: Student categorization of well Confidentiality

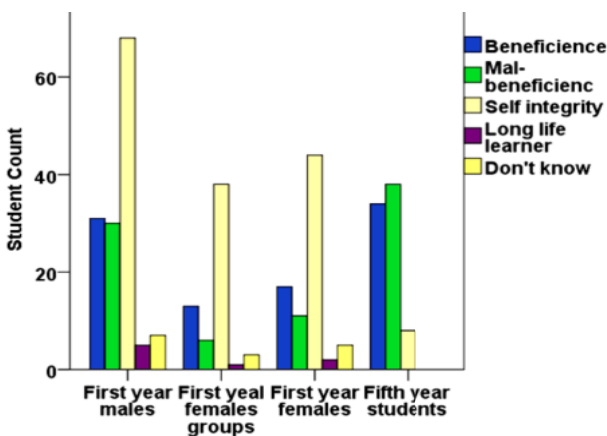


Fig 2: Student responses in categorizing protecting oneself by washing hands and wearing gloves.

Discussion:

Professionalism is the application of the good values ever the humanity has known. In ancient times the Hippocrates Auth was formulated from which the medical professionals derived the medical ethics that

is being so far followed. It was defined by researches as: “activedemonstration of the traits of a professional displaying values, beliefs and attitudes that put the needs of another above your personal needs.”²⁻³

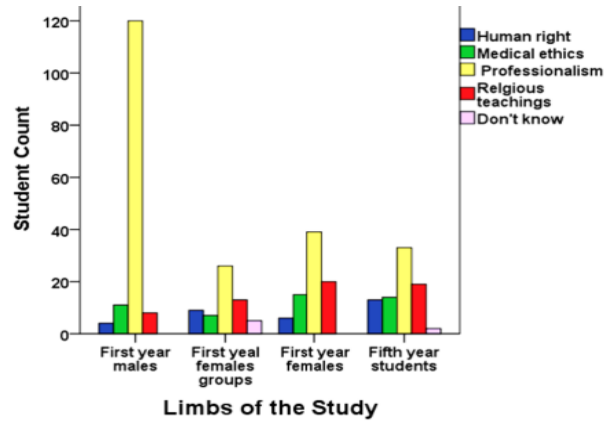


Fig 3: Students categorization of securing sharp objects for proper disposal to protect others.

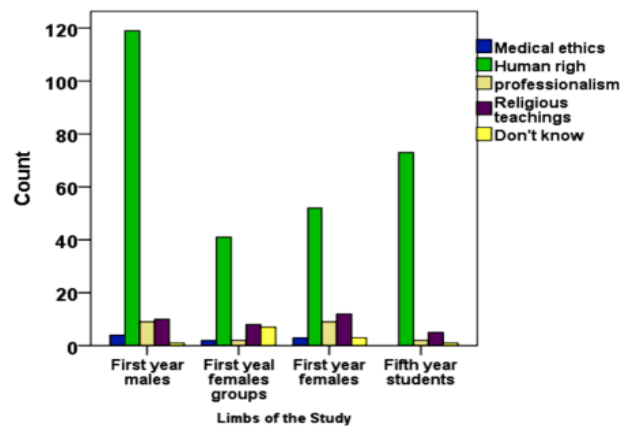


Fig 4: Students response in defining the Health care for the disabled as Human rights P=0.0000.

Religion came to polish the deeds with divine values. More than 14 centuries ago Profit Mohammed Said: "I was send but to accomplish the Best ethics"⁴ "إنما بعثت لأتمم" مكارم الأخلاق and "Religion is not but the guide for the best bilateral relationship"⁵ "الدين " المعاملة. In the 18th century the social contract formulated by Jan Jack Rossue⁶ had defined the relationship between the "Professionals", "the Society" and its "Supreme authority" i.e. the so called government. In the last decade the term professionalism has gained momentum in the international medical

literature. It is ongoing debate that the reasons for the increasing society dissatisfaction are probably not related to the level of technical competency only but in its greatest part related to the poor inter and intra communication skills i.e. between the practitioner and the customer from one side and in between the practitioners themselves in the other side. In this study we attempted to find out if the Religious Teaching in the University

Requirement is well integrated with the medical sciences and helps to improve the behavioural believes of the medical students as future professionals or not. Also, we wanted to find out the impact of the syllabus taught theoretically to the first year medical students and the addition of practical gains from the role model teachers of the fifth year students.

In **categorising an action as an advocacy**

Table 4: Student responses on Organ Transplantations and Tissue Engineering

Class	Organ Transplantations and Tissue Engineering					Total
	Human right	Medical ethics	Professionalism	Religious teachings	Don't know	
First limb	77(54.6%)	19(13.5%)	3(2.1%)	37(26.2%)	5(3.5%)	141(100.0%)
Second limb	24(40.7%)	6(10.2%)	2(3.4%)	18(30.5%)	9(15.3%)	59(100.0%)
Third limb	33(43.4%)	13(17.1%)	2(2.6%)	23(30.3%)	5(6.6%)	76(100.0%)
Forth limb	25(30.9%)	10(12.3%)	2(2.5%)	37(45.7%)	7(8.6%)	81(100.0%)
Total	159(44.5%)	48(13.4%)	9(2.5%)	115(32.2%)	26(7.3%)	357(100.0%)

the top most answers were 69(86.3%) of the fifth year medical students followed by 112(78.9%) of the first year male students. This could be explained by the impact of the role models (teachers) and the empathetic feeling towards patients during the clinical clerkship. This finding is supported by the fact "the Patient Support organization" was first established by the students of this Faculty then the organization spread among the students of other medical schools in Sudan. On the other hand, 119(83.2%) of the first year male students compare to 73(90.1%) of the fifth year medical students were able to identify that availing medical facilities to the disabled and the vulnerable groups as a basic **human right**. This could be explained by impact of teaching the UN Human Rights Declaration and the Human Rights in Islam on the first year male students. Observing the human rights point towards the key role Faculty members should play in the professional growth of students⁷⁻¹⁰

The majority (>90%) of all groups of students were able to described professional **integrity**. These responses are in keeping with the reported literature that in the early stage students have a strong willingness to engage

in professionalism education¹¹. Also, they can be explained by Colin P West and Tait D Shanafelt who statement "that integrity is one of the personal and environmental factor that influence professionalism in the medical education¹²."

To us competency and efficiency of doctors are of paramount importance. Although medical students are among the top most university students, nomenclature like **beneficence** and **maleficence** seems to be confusing to them. This confusion probably led to the poor correct responses in all classes because the highest number of students who considered protecting oneself from harm such as wearing of glove to be part of the **Religion Teachings** was 34(42.5%) fifth year students. Although all student know very well from there elementary school religion education that "removal of injurious objects from people pass ways is an endowment" the majority of students in all classes considered secure disposing of sharps to prevent others from harm as part of professionalism rather than a guidance of religion. This again indicates that the University Requirements are not well integrated with the medical sciences in the current syllabus. This indicates that medical

ethics the relevant religion teaching as well as medical professionalism should be incorporated in the early teaching of medical students¹³. (4) The low correct responses in this issue are hoped to be rectified when acquired by role models upon exposure to professional practice¹⁵.

Furthermore, 132(93%) and 83(58.5%) of first year medical students were able to mention correctly the differences between the **Healer and the professional** and to specify the confidentiality issue in taking informed consent respectively. **This indicates that the theoretical teaching on professionalism had impact on their understanding compared to the rest of the students.** Yet, we do agree with the fact that "it does not matter how much a student knows about professionalism. What is important is how well a student performs as a professional"¹⁶

in reflexion to the varying definitions of professionalism⁴.

The students' categorised the origin of regulation of **organ transplantation and tissue engineering as human rights** followed by **Religion Teachings**. We believe that basics of professionalism should be taught early in the medical school, but should be integrated in all courses taught later. We teach a chapter on directives governing **genetic modulations** governing experimental research on animals and human beings in **Doctors Figh in the first year yet these issues should better be taught again as integrated in the course of the cell biology** and should be integrated with all subjects in the clerkship. Also, communication skills should be incorporated in the systemic modules to be practiced with peers and standardized patients before exposing students to real patients in hospitals. The students should also be encouraged to present seminars on ethics of contemporary issues like genetic modulation and tissue engineering. This will augment understanding of the concept of medical ethics, human rights and professionalism among the students. The academic courses, tutorials and seminars that require socialization and collaboration across

disciplines are good media for theoretical and practical training on these subjects.¹⁷

Conclusion:

The first year male medical students who were taught medical professionalism, medical ethics and human rights have better conceptual understanding of these subjects. All the students seem to understand the characteristics of self integrity of the professional however the fifth year medical students have shown more practical understanding of empathy and advocacy. The first year female medical students who collaborated in filling the questionnaires seem to help each other in benefiting from teaching of the religion teachings (Doctors Figh and University requirements). Medical ethics, Human rights, Professionalism and the University Requirements should be integrated in almost all areas of the curriculum to have better perception and practical application of these issues.

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