Comparison in Knowledge and Attitude about Professionalism among fourth Year Dental Students at Karary University (Sudan) in 2020

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Abstract

Background: Medical professionalism is defined as a group of behaviors that reflect personal values, qualifications, beliefs, attitudes and ethical backgrounds.

Method: This is an experimental case control study among fourth year dental students at Karary University (Oral and Dental Medicine), using a self-administered questionnaire for knowledge and attitude regarding professionalism. In this study, the students were divided into two groups. The experimental group (A) had an interactive lecture about professionalism with short role play and then, they filled the questionnaires. The control group (B) just filled the questionnaires without taking any lectures All statistical procedures are performed using SPSS 25.0 Statistical Software Program Data normality was evaluated by the Kolmogorov-Smirnov statistical test. Using the Mann- whitiny test to compare group (A) and group (B) in Professionalism Characteristic means, overall professionalism characteristics and the professionalism characteristic items means. For the comparison between groups (A) and (B) in the methods of learning and the tools of assessment regarding professionalism in the student's opinion, we used the Chi- Square test.

Results: 46.2% of the group(A) and 35 % of the group (B) got their information regarding professionalism from their colleagues .20 % of the group(A) thought that the lectures and role modeling were the best methods of learning regarding professionalism w h i l e 29% of the group (B) thought that only the lectures was the best method. 32% of the group (A) thought that the Performance –based assessment is the best way for assessment, while 27% of the group (B) thought that the Multiple Choice Questions is the best way with a statistically significant difference. The Comparison between group (A) and group(B) in Professionalism Characteristics means and the overall mean showed that group (A) scores better than group (B) with statistically significant differences and p-value <0.000.

Conclusion: group (A) showed better answers and a deep understanding of professionalism with higher attributes means and overall, mean in comparison with the other group that did not take the lecture. The Performance –based assessment is the best way that professionalism should be assessed in group (A) opinion.

Keywords: comparison; knowledge; attitude; professionalism; dental students

Introduction

Medical professionalism is defined as a group of behaviors that reflect personal values, qualifications, beliefs, attitudes and ethical backgrounds (1). Medical professionalism does not just involve the knowledge and skills of the doctors, but also involves their attributes and behaviors which must meet the expectations of the patients, the community and other professionals (2). The doctor -patient relationship depends on the professionalism and communication between them (3). The incidence of medical errors may increase with a lack of medical professionalism (4).

Professionalism stands on a foundation of attributes that include: excellence, compassion, autonomy, accountability, confidentiality, respect for patient dignity, altruism, responsibility, integrity, honesty, leadership, doctor–patient relationship, teamwork, patient satisfaction, morality and ethical conduct (5, 6). This variety of attributes shows that the doctors level of professionalism depends on a balance between several factors, some of which are internal, related to the personality of the professional and the others are external, connected to the knowledge regarding professionalism,

scientific base, social, cultural and faculty environment (6). Professionalism content has the appropriate attitudes, values and behaviors needed for professionally practicing dentistry and studies show that professional dentists can produce better patients health outcomes by improving diagnostic accuracy, increasing patient's Satisfaction, patient's co- operation and reduces patient's anxiety regarding dental treatment (7).

Researchers have indicated that the student perception of professionalism may be shown if the current educational process promotes professional attributes, values, attitudes and behaviors or not and it isalso critical for the development of specific courses to improve professional concepts (8, 9). Most methods which are involved in the learning of medical professionalism are traditional, depending on lectures and seminars throughout the course to overcome the gap in this process, other professionalism teaching methods in medical schools may be used, like: role modeling by teachers, role modeling by senior colleagues, reading, web based courses, case based scenarios, mentor programs and role play (9, 10).

Role modeling and personal reflection are considered as a very important method to transmit the contents of medical professionalism to the learners and in medical education teachers may consciously or unconsciously act as role models for the students (11). It is important to know that the professional development of medical students is more likely to occur in a supportive learning environment (12).

The semifinal year dental students are the future dentists and medical professionalism promotes their ethical and moral duties and their responsibilities of them towards the patients (5). Negative professional attitudes and behavior lead to a negative impact on society, so the medical

school should make enough efforts regarding teaching professionalism and generate an educational atmosphere that ensures professionalism among the teachers and learners (5).

Certain aspects of professionalism may be underdeveloped in medical students and these aspects should become targets in the teaching of professionalism by different methods of learning (13).

2. Methods: We conducted an experimental case- control study with a faculty based at Karary University (Oral and Dental Medicine) which belongs to the Ministry of Defense in Omdurman. It is located in the collection of the faculties of medicine and the health sciences. This study was done among fourth- year dental students (male (civilian and military) and female (civilian). A total of 80 dental students were involved in this study. The students did not take professionalism in a formal way at their university. In this study, the students were divided into two groups. The experimental group (A) had an interactive lecture about professionalism with some sort of short role play to explain some of the attributes, and then given the questionnaire to fill in. The control group (B) just fille d in the questionnaires without taking any lectures regarding professionalism. The modified Self-administer questionnaire was used to collect data from study participants, which included demographic data, part for knowledge and attitude regarding professionalism (6,14,15,16).For the Professionalism attributes, such as honesty, accountability, respectfulness, responsibility, compassion, communication, excellence, leadership and altruism, there were Statements under each professionalism core element (a total of 48 statements (items) that were measured by a 3-point Likert scale represented as :1- Disagree, 2-Neutral, 3 –Agree. The means of each attribute for group (A) and group (B) were measured and then a n analytic comparison was done, after that the Overall mean for both group with it comparison was measured and the attributes items means.

Likert Scale 3 Points:

Likert Scale	Interval	Description
1	1 – 1.66	Disagree
2	1.67 – 2.33	Neutral
3	2.34 - 3	Agree

The questionnaire also contained three multiple choice questions for each group, exploring the source of information about professionalism, how professionalism should be taught (how they learned professionalism), and how professionalism should be assessed in their dental students opinion (the students can select more than one answer). And one open-ended question regarding their knowledge of professional attributes. Comparison was done between group (A) and Group (B) for all questions.

All statistical procedures are performed using SPSS 25.0 Statistical Software Program (SPSS, Inc., USA). Data normality was evaluated by the Kolmogorov-Smirnov statistical test. Using the Mann- whitiny test to compare group (A) and group (B) in Professionalism Characteristic means, overall professionalism characteristics and the professionalism characteristic items means. For the comparison between groups (A) and (B) in the methods of learning and the tools of assessment regarding professionalism in the student's opinion, we used the Chi- Square test.

The study objectives are to compare the Knowledge and the attitude to Professionalism among fourth year dental students at karary University and to determine the preferred learning and assessment method regarding professionalism in the student's opinion

3. Results:

Demographic characters of the study groups in table 1 showed that 65 % of the group (A) and 70% of the group (B) were females. 77.5 % of the group (A) and 80% of the group (B) were Civilian, 67.5 % % of the group (A) and 50% of the group (B) were residents in Omdurman city. The source of information regarding professionalism among semifinal year dental students as seen in

table 2 showed that 46.2% of the group (A) and 35 % of the group (B) got their information regarding professionalism from their colleagues. Table 3 demonstrated the methods of learning regarding professionalism in the student's opinion, the results showed that 20 % of the group (A) thought that the lectures and role modeling are the methods of learning regarding professionalism while 29% of the group (B) thought that only the lectures are the method that should be taken for learning, without statistically significant difference between them. Regarding the tools that professionalism should be assessed in the student's opinion 32% of the group (A) thought that the Performance–based assessment is the tool that professionalism should be assessed by, while 27% of the group (B)thought that the MCQs is the tool that should be taken for assessment there is a statistically significant difference between group A and group B in assessment opinion for MCQs using a significant level 0.05, as found in table 4. When we asked about the characteristics (attributes) that are involved in medical professionalism 20 students, 58% of group (A) gave full answers regarding the characteristics that are involved in medical professionalism while only two students in group(B) gave only partial answers about the professional characteristics as seen in table 5.

In the table 6 regarding professionalism characteristics there were statistically significant differences between group (A) and group (B)in Compassion, Respect, Communication, Altruism, Excellence, Responsibility, Honesty, Integrity and Leadership, means using a significant level of 0.05. Table 7 demonstrated that the mean of the group (A) 2.91 was higher than that of the group (B) 2.80 and there were no statistically significant differences between group A and group B in the overall professionalism characteristic mean. Regarding the professionalism

characteristic items means table 8 showed that the means of the professional Characteristic (attributes) items were higher in group (A) than characteristics in group (B) in most of the items with statistically significant difference in some of them (*)with p value less than 0.05

		(A)		(B)	
		N	%	N	%
		Frequency	Percent	Frequency	Percent
Gender	Male	14	35.0%	12	30.0%
	Female	26	65.0%	28	70.0%
	Total	40	100.0%	40	100.0
Military or Civilian	Military	9	22.5%	8	20.0%
	Civilian	31	77.5%	32	80.0%
	Total	40	100.0%	40	100.0%
Residence	Khartoum	3	7.5 %	9	22.5%
	Omdurman	27	67.5 %	20	50%
	Khartoum Bahri	7	17.5 %	7	17.5.4%
	Other	3	7.5 %	4	10%
	Total	40	100.0%	40	100.0%

Table 1: Demographic characters of the study groups:

		Frequency	Percent
A	Media	4	10.3%
	Internet	8	20.5%
	University	7	17.9%
	Friends and Relatives	2	5.1%
	Colleague	18	46.2%
B	Media	4	10.0%
	Internet	9	22.5%
	University	10	25.0%
	Friends and Relatives	3	7.5%
	Colleague	14	35.0%

Table 2: The source of information regarding professionalism among semifinal year dental students:

Learning Methods for Professionalism	A	B	P value
Lectures	21 (20%)	27 (29%)	<0.587
Tutorials	13 (13%)	14 (15%)	<0.249
Role Play	13 (13%)	6 (6%)	<0.351
Case Scenarios	18 (17%)	19 (20%)	<0.512
Problem based learning	18 (17%)	19 (20%)	<0.644
Role Modeling	21 (20%)	8 (9%)	<0.290

Table 3: Methods of learning regarding professionalism in the student's opinion

The tools of assessment	A	B	P value
MCQs	10 (14)	22 (27)	<0.017*
Short answer questions	13 (18)	17 (21)	<0.496
Standard Checklists	5 (7)	10 (12)	<0.915
Competency –based assessment (OSCEs)	7 (19)	10 (12)	<0.428
Performance –based assessment	23 (32)	15 (18)	<0.466
Portfolio	14 (19)	8 (10)	<0.588

Table 4: The tools that professionalism should be assessed by in the student's opinion:

	A N 40%	B N40%
Yes (give answers)	35 (87.5%)	2 (5%)
Full answer	20 (58%)	0 (0)
Partial answer	15 (42%)	2 (100%)
No (did not give answers)	5 (12.5%)	38 (95%)

Table 5: The Characteristics (attributes) that involved in medical professionalism:

Attributes	Group	Mean	Std. Deviation	P Value
Accountability	A	2.87	0.21	<.08
	B	2.73	0.14	
Compassion	A	2.86	0.22	<.03*
	B	2.74	0.14	
Respect	A	2.91	0.21	<.01*
	B	2.81	0.11	
Communication Skills	A	2.95	0.24	<.01*
	B	2.81	0.14	
Altruism	A	2.97	0.35	<.02*
	B	2.83	0.09	
Excellence	A	2.94	0.25	<.00*
	B	2.82	0.13	
Responsibility	A	2.94	0.25	<.01*
	B	2.82	0.13	
Honesty Integrity	A	2.90	0.24	<.00*
	B	2.79	0.16	
Leadership	A	3.00	0.27	<.00*
	B	2.92	0.00	

Table 6: Professionalism Characteristics means:

Group	Mean	Std. Deviation	P Value
A	2.91	.07	<.000*
B	2.80	.16	

Table 7: The Overall Professionalism Characteristics mean:

4-Discussion:

Professionalism is essential for successful dentists and, in addition to knowledge and skills, one of the most important responsibilities of dental universities is to ensure that students have the professionalism with all its attributes to create a professional dentist (17)

This study aims to compare the knowledge and attitude about professionalism between the group that had the interactive lecture about professionalism (A) and the group that did not have the lecture(B) among fourth-year dental students at Karary University (Oral and dental medicine) in Omdurman City (Sudan). Knowledge about how students develop professionalism is important for understanding their professional development needs, it may also help in determining an appropriate curriculum, learning, and assessment methods for professionalism (18).

In this study,46.2%of the group(A) and 35% of the group (B)got information regarding professionalism from their colleagues as a source of information, because they may follow their colleagues unintentionally and that may shape their attitudes and perceptions about the real expectations of the profession. Ashar et al had different results, which showed that most of the information regarding professionalism among dental students came from personal moralities, family values, and religion. All play different roles in shaping the students 'professionalism. (18).In another study that was done by Ranautaet.al among under graduate dental students to identify experiences that dental students used in developing their understanding and enactment of professionalism, they found that the students got their professionalism from lectures and the attributes of clinical work and role modeling (19). Such experiences do not exist in our curriculum, which has led our students to develop some of the information about professionalism from their colleagues rather than the curricular activities.

In the present study, 20% of the group (A) thought that lectures and role modeling are the methods of learning regarding professionalism while 29%ofthe group (B) thought that only the lectures were the method that should be taken for learning, without statistically significant difference between the two comparative groups. This result can be explained by the fact that group (A) attended the informative interactive lecture about professionalism and had a good idea about it is learning methods. The results regarding learning methods in the students' opinion were in agreement with the Ashar et al study in which role modeling was identified as one of the most important methods to improve attributes of professionalism among dental students and the effectiveness of lectures in reinforcing the characteristics of professionalism, it remains uncertain (18). This result was also in agreement with Uma et al study which demonstrates that 93.2% of dental undergraduate students thought that faculty members were role models for professionalism among students (20). A Study was done by Habib et al demonstrated that the most effective and best method of teaching professionalism to dental students is role modeling and personal reflection of teaching faculty (21).

Effective role modeling stays the cornerstone for professional development, and the best way of learn about professionalism is by watching someone who has got experience in professional attributes and, copying (18,19). The result of this study was not in agreement with the Field et al study which concludes that the best methods of teaching professionalism among UK dental schools were traditional, depending on lectures and seminars taught throughout the course (10). Also was not in agreement with the study of karrar and Mohamed et al who evaluate the teaching of professionalism in undergraduate medical curricula in Sudan, they found that the most common methods used for teaching professionalism were lectures (96.9%) followed by tutorials 34.4%, seminars and role play(22).

Dental professionalism is an important requirement to practice dentistry. It covers both abilities and personal attributes. Therefore, there is a need for assessment within dental education to determine whether students have achieved adequate standards regarding professionalism (23). In the present study, 32% of the group (A) thought that performance–based assessment is the tool that professionalism should be assessed, while 27% of group (B) thought that the MCQs are the tool that should be taken for assessment, with a statistically significant difference. This result was in agreement with the descriptive, analytical review study that had been done by Lina Gassner for assessing professionalism in dental education in UK dental schools. She found that the tool mostly used was a "paper-based test", followed by simulation and the comprehensive role of the supervisor (16).

Also, another study that was done by karrar and Mohamed et al in Sudan found that the most common methods used for professionalism assessment in medical colleges in Sudan were the MCQs/EMQs 96.95% followed by case scenario 21.9% and, OSCE (22). The single assessment tool is not likely to fully cover everything about professionalism, so multiple tools are usually used (6).

Professionalism attributes assist in dental student's values, morals and Character building.

The patient should be treated as an individual, and the patient's needs and wants should be kept as a priority (24).

The results of this study showed that 20 students (58%) of the group(A)gave full answers regarding the characteristics involved in medical professionalism in the student's opinion, while only two students in group (B) gave only partial answers about the professional characteristics. This is because group (A) took the informative interactive lecture about professionalism and they had a good idea about professionalism attributes (characteristics). This finding was in agreement with Srivastav et al study where they found that (84.1%) of the dental students who were taught about professionalism had an idea about it and(15.9%)of the students did not have any idea about professionalism(25).In this study, the Comparison between Group(A)and Group(B) in Professionalism Characteristics means, for each attribute, showed that group (A) had higher means with statistically significant differences for all attributes except accountability, this result reflects a better attitude regarding the professionalism attributes than that of the group(B). The overall mean of all professionalism attributes was higher in group A (2.91) than in group B (2.8) with a statistically significant difference, which reflects the high level of agreement regarding the statement of the attribute. This is because the group (A) received an informative interactive lecture about professionalism and professional attributes, with multiple examples to maintain their deep understanding. These results were not in agreement with the study that had been done by Akhund et al that showed no significant differences in the elements of professionalism (Accountability, Altruism, Duty, Excellence, Honesty & Integrity, and Respect) mean scores or in the overall mean score of professionalism among the different classes of the undergraduate medical students in the public medical college at Karachi, Pakistanin2011. This finding could partly be explained because in Pakistan no formal activity or course aimed to enhance professionalism is carried out in the undergraduate medical curriculum. Professionalism is considered an attribute that is tacitly learned by students during their faculties training years (9).

A study was done by Rasul et al for the assessment of medical professionalism among students and faculty members of Shalamar Medical and Dental College, Lahore. The results showed that honor and integrity were found to be the most valued traits, mean scored domain while excellence and autonomy were the lowest mean scored domain of medical professionalism among students and faculty members of medical and dental students for first and final years.

There was a significant difference among the attitudes of the first and final year's students in the domains of excellence, autonomy and altruism. Role modeling of faculty teachers is one of the most influential methods of teaching medical professionalism as honor and integrity were the most valued domains by teachers as well as students. This is also true for excellence and autonomy which were the domains with the lowest scores by faculty and students (26).

In this study, the Comparison between Group (A) and Group(B) in Professionalism characteristic items demonstrates that the means of the professional characteristic (attributes) items, were higher in group(A)who attended the professionalism lecture, than in group(B) who did not attend in most of the items with a statistically significant difference in some of them.

The items that showed statistical significant difference between the two groups are, regarding accountability the items of (I am precise, I carry out my duty well and I am a good leader), in compassion the items of (I should adapt to the level of the patient' s understanding, I am willing to help people in need and each patient deserves individual management), in respect the items of(dealing with staff, nursing and colleague with respect and give attention to arrive on time for lecture and clinic , Give attention to arrive on time for lecture and clinic),in communication skill the item of(to support problem solving),in altruism the items of(I put the need of patients over self-need and   I give enough time for good examination and during this ,give more concern to the patients complain than own self issues), in excellence the items of lifelong learning   and   the ability to learn independently), in responsibility the items of(the availability when the doctor becomes on calling ,the professional should meet patient's needs and motivation and collaborates with the other professionals to increase the quality of the medical care),in honesty and integrity the item of(I am commitment and straight forward in all situations). This could be explained by the fact that group (A) becomes more understanding about the real meaning of each professional attribute. The lowest level of agreement was found in the group(B) with the items of accountability(I am precise, carry out my duty well and I usually follow the task that I should perform)and with the item of respect(I can tolerate diversity). The level of agreement regarding attribute items in group (B) could be managed by the formal integration of the professionalism and its attributes in the preclinical and clinical curriculum of the dental faculty and by the intentional focusing of the faculty staff to become positive role modeling for their students.

This result was in agreement with Chaudhry et al who found that most of the professionalism competencies were agreed by the graduates' dental students at Pakistan dental college, to be essential for dentists. The highest level of agreement (99.9%) was with the items of" displaying appropriate caring behavior towards patients and showing a willingness to help. (97.4%) of the graduates agreed that they should have the competence of "providing humanity and compassionate care to all patients and 90.0% of them agreed with the essential of establishing an appropriate patient-dentist relationship that allows the effect of delivery of dental treatment, this item is under the attributes of communication skills. The lowest level of agreement with the items of (seeking to continue professional development through portfolio), safe working environment, and the importance of inter-professional communication (27).

Medical professionalism is one of the core competencies of dentists (28). Teaching professionalism at the early stages of the curriculum should mimic the real life scenario and should reinforce it through clinical practice at the late stage of the curriculum (29).

Conclusion

Professionalism is important competences for undergraduate dental students, most of the group that attended the interactive lecture(A) and most of the group that did not attend it (B) got the information regarding professionalism from their colleagues .20% of the group (A)showed high interest with role modeling and lectures, as methods of learning for professionalism while 29 % of group (B) thought that only the lectures were the preferred method of learning .32 % of the group (A) thought that the Performance–based assessment is the way that professionalism should assess by, while 27% of the group (B) thought that the MCQs is the way that should be taken for assessment with a statistically significant difference, the mean for each professional attributes and the overall mean of group (A) were higher than group(B) with statistically significant difference. The means of the professional Characteristic (attributes) items were higher in group A than group B in most of the items, with statistically significant differences in some of them with p value less than 0.05.

Declaration:

Ethical consideration:

Approval letter was taken from Karary University (Oral and Dental Medicine). The participants were informed about all the details and purpose of the research and about the steps through the research. Verbal informed consent was taken from fourth year dental students and the procedure for obtaining verbal informed consent was approved by an ethics committee of karary University.

Competing interest: The authors declare that they have no competing interests (including financial, personal, academic and ideological).

Availability of data and materials: Not applicable now. but in request we can get it.

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