Evaluation of Medical School 4th and 6th Grade Programs in Terms of Professionalism According to Demirel's Analytical Model: A Mixed Method Study

Tıp Fakültesi 4. ve 6. Sınıf Programlarının Profesyonalizm Açısından Demirel'in Analitik Modeline Göre Değerlendirilmesi: Bir Karma Yöntem Çalışması

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Abstract

Aim: This study aimed to evaluate whether the objective dimension of medical school curriculum includes objectives related to professionalism, to what extent, at what learning stage students acquire these dimensions, and to evaluate it according to Demirel's Analytical Curriculum Evaluation Model (DACEM).

Methods: The sequential explanatory design, a mixed research design, was used, included a total of 337 4th- and 6th- year medical students. Multi-way analysis of variance, multivariate analysis of covariance, correlation analysis, content analysis and document analysis were performed. The programs were evaluated with the DACEM.

Results: Professionalism scores were average and above average. Many of these dimensions showed positive relationships with each other. There were no objectives related to empathy and motivation in the programs. There were a limited number of objectives related to other professionalism dimensions, and these were mostly in the clinical training years.

Conclusions: According to the DACEM, the objectives in the programs were not designed in accordance with the principles of objective writing, no taxonomy was used when determining the objectives, and the objectives overlapped. The philosophy on which the programs are based was not clearly stated, and it was observed that the objectives were designed in accordance with the needs and expectations of the society, as well as the level and requirements of the student.

Özet

Amaç: Bu çalışmada tıp fakültesi programının hedef boyutunun profesyonellikle ilgili hedefleri içerip içermediği, öğrencilerin bu boyutları ne ölçüde ve hangi öğrenme aşamasında edindikleri ve programının Demirel'in Analitik Müfredat Değerlendirme Modeli'ne (DACEM) göre değerlendirilmesi amaçlanmıştır.

Yöntem: Karma yöntem araştırması kapsamında ardışık açıklayıcı tasarım kullanılmış ve toplam 337 4. ve 6. sınıf tıp öğrencisi çalışmaya dahil edilmiştir. Çok yönlü varyans analizi, çok değişkenli kovaryans analizi, ilişki analizi, içerik analizi ve doküman analizi yapılmıştır. Programlar DACEM çerçevesinde değerlendirilmiştir.

Bulgular: Profesyonellik puanları ortalama ve ortalamanın üzerindeydi. Bu boyutların çoğunda birbirleriyle olumlu korelasyon vardı. Programlarda empati ve motivasyonla ilgili hedefler yoktu. Diğer profesyonellik boyutlarıyla ilgili sınırlı sayıda hedef sınırlı sayıda olup bunlar çoğunlukla klinik eğitim yıllarındaydı.

Sonuç: DACEM'e göre programlardaki hedefler, hedef yazım ilkelerine uygun olarak tasarlanmamış, hedefler belirlenirken herhangi bir taksonomi kullanılmamış ve hedeflerde örtüşme olduğu tespit edilmiştir. Programların temel felsefesi açıkça belirtilmemiştir. Ancak, hedeflerin toplumun ihtiyaç ve beklentileri ile öğrencinin düzeyi ve gereksinimleri doğrultusunda tasarlandığı görülmüştür.

Introduction

In the National Core Curriculum for Undergraduate Medical Education (NCC-2020) (1), professionalism is a competence field and is also included in the list of behavioral, social, and human science situations. Professionalism has been identified as an important learning outcome in medical education. It is seen in the literature that the concept of professionalism has a very broad umbrella. Within the scope of this study, we considered the following dimensions of professionalism: empathy, motivation, clinical leadership, cultural intelligence, commitment to profession, resilience and clinical decision-making. The medical education process is dynamic, and it is necessary to question and evaluate the program in aspects such as purpose, cost, time and functionality. To increase the quality of education, it is necessary to make these evaluations systematically and scientifically to using program evaluation (2). Based on the purpose, context, and stakeholders of program evaluation there are different evaluation models in the literature. In this study, we used the Analytical Curriculum Evaluation Model (DACEM) developed by Demirel was used. DACEM has two basic dimensions: program analysis and stakeholder/beneficiary views (3). These two dimensions of DACEM can be used as a valuable program evaluation model in the evaluation of medical school programs since it conducts program evaluation by considering both written materials and the views of stakeholders affected by the program. Demirel (4) recommends mixed research methods and techniques for program evaluation studies. In this way, quantitative and qualitative data are blended and results are reached with a more in-depth examination.

DACEM criteria in this program evaluation study; whether taxonomy is used when determining the objectives, whether these objectives are achieved through education, whether these objectives are appropriate to the needs of the society and the levels of the students, whether they are consistent with the philosophy of the program and within themselves, and whether they are measurable. Although there are studies in the literature on the evaluation of medical education programs, there is no study evaluating medical education programs within the framework of a model and using DACEM particularly.

There is a need for concrete data on how professionalism, which is emphasized by many institutions and organizations, is addressed in the programs of medical faculties and to what extent students achieve professionalism outcomes. Therefore, in this study, it is important to investigate professionalism in the clinical period when students have the opportunity to put their theoretical knowledge into practice and to determine whether there is any change. In this research, we examined the learning objective of the 4th and 6th year curriculum in terms of professionalism. We also aimed to determine the change in the dimensions of professionalism within the students before and after clinical education. In addition, since it is thought that students may encounter the dimensions of professionalism discussed within the scope of the

research at any stage of their educational lives, the curriculum of all levels of the Faculty of Medicine were evaluated. The research questions of the study were determined as follows:

• What is the level of professionalism of students? Does the level of professionalism change according to class and gender variables?
• Is there a relationship between students' professionalism dimensions?
• What are the students' views on professionalism?
• How is the evaluation of curricula according to DACEM?

Material and Methods

1. Study design: In this study, Sequential Explanatory Design (5) was used. The mixed method of program evaluation provides valuable information to the evaluators as it enables a more holistic interpretation of the results. This is one of the mixed research designs in which both quantitative and qualitative research methods are used together. In this design, quantitative data is first collected followed by qualitative data. The basic logic of this design is that quantitative data paints a general picture of the situation,while qualitative data gives the explanation (6). The research's quantitative dimension was planned in survey and relational research model. Integrative multiple case study design was used to collect qualitative data in the research. "Curriculum Evaluation Criteria" created by Yazçayır (7) were used in program evaluation.

2. Study participants

This research involved 300 students in the 4th year and 244 students in the 6th year at the Faculty of Medicine where the research was conducted. An attempt was made to reach the entire study population; hence, no sample selection was done to collect quantitative data (reach rate of 69.3% and 52.8% for 4th and 6th years, respectively). The average age of the participants was 22.98±1.89, with female being 43.62% and 61.72% were 4th year medical students. To select the study group to be included in the qualitative analyses, the total scores of the measurement tools answered by the 4th and 6th year students for the seven dimensions of professionalism were examined. A ranking was created based on the averages of these scores,

and students in the lower and upper 27% were announced for interviews. Interviews with volunteer students were conducted until data saturation was reached. 75 and 52 interviews were held with the 4th and 6th year students, respectively.

3. Instruments

For the quantitative research data, the Jefferson Scale of Physician Empathy (α=0.88) (8), Brief Regulation of Motivation Scale (α=0.939) (9), Clinical Leadership Scale (α=0.975) (10), Turkish Version of Cultural Intelligence Scale (α=0.94) (11), Commitment to Profession of Medicine Scale (α=0.912) (12), Resilience Scale for Adults-Turkish Version (α=0.885) (13), and Clinical Decision Making Scale for Medical Faculty Students (α=0.94) (14) were used. The reliability coefficients of the scales for the research group were given. Written consent was obtained from the authors who developed and/or adapted the scale before using them.

In order to collect qualitative data, semi-structured interview forms were created for each dimension of professionalism, which consisted of questions that questioned the students' views on each dimension of professionalism and aimed at determining their perspectives, expert opinions were obtained for these forms, a pilot application was carried out and interviews were held after the necessary arrangements. In addition, medical school curriculum, program outcomes and NNC 2020 documents were also analyzed.

4. Data analysis
1)Content analysis

Before commencing the program evaluation process, the qualitative method was embedded in the dominant quantitative method. In this context, according to the measurement results for the 4th and 6th years, the codes of the lower and upper groups, and then the codes of the 4th and 6th years, were compared and interpreted. We analyzed the data and reported the results. Due to the nature of qualitative research, interviews were conducted until data saturation was reach. Within the scope of the research, the collection and analysis of qualitative data were carried out simultaneously. When it was realized that the answers were repeated in the interviews of the participants, the themes were examined and it was decided that data saturation

was reached when no new themes emerged. A total of 75 interviews were recorded. Quotations were included to support the qualitative findings. For this purpose, nicknames were determined as "6cllgge". This nickname includes the class, professionalism dimension, the group in which it is located and the initials of the names.

In order to obtain in-depth information from the data collected, content analysis was carried out. The interview data was first transcribed on a computer and then transferred to the MAXQDA 2022 program. The data transferred to the MAXQDA program was coded using an inductive approach by the researcher and an expert; a code matrix was created and the compliance rate in the coding was checked (code compliance rate 84.68%). The resulting codes were classified and thematized according to their relationships with each other. An analytical strategy was used while analyzing the data.

2) Statistical methods
Quantitative data were analyzed using the SPSS 25 statistical package. The Kolmogorov-Smirnov test was used to assess whether the data followed a normal distribution. The significance value was taken as $p<0.05$. To check whether the variances were equal across groups, Levene's test was conducted. A p value greater than 0.05 was accepted as homogeneity of variance. In the independent sample t-test, Pearson correlation analysis, multi-way analysis of variance (MANOVA) and multivariate analysis of covariance (MANCOVA) tests conducted for class and gender variables, the "p" value was greater than 0.05 were considered statistically significant. In the MANCOVA test, year and gender variables were included. The year variable was included because of the main purpose of the study, and the gender variable was included because there are studies in the literature indicating that the level of professionalism is related to this variable. Multiple correlation analyzes were conducted to determine the relationships between the scores obtained from the scales.

5. Ethical considerations
Ethical approval was obtained from the Aydin Adnan Menderes University Educational Research Ethics Committee decision number 2021/20-IV.

Results
1. Quantitative findings
The mean scores of the scales are given in Table 1. It was determined that the average scores of the students in empathy, motivation, cultural intelligence, commitment to profession, resilience and clinical decision-making were above average, and the average score of clinical leadership was high.

Table 1. Descriptive Statistics of Scale Scores (n=337)

	X.	S.D.	Min.	M	Max.	Scale Score Interval
Empathy	64,74	±11,55	20,00	63,00	100,00	20,00-100,00
Motivation	38,82	±10,10	12,00	38,00	60,00	12,00-60,00
Clinical leadership	99,89	±16,27	40,00	104,00	120,00	40,00-120,00
Cultural intelligence	99,39	±20,02	32,00	99,50	140,00	20,00-140,00
Commitment to the Profession	32,99	±7,68	9,00	34,00	45,00	9,00-45,00
Resilience	118,68	±17,81	68,00	118,00	165,00	33,00-165,00
Clinical decision making	114,08	±15,36	27,00	114,00	135,00	27,00-135,00

X: Mean, S.D.: Standard Deviation, Min: Minumum, M: Median, Max.: Maximum

No statistically significant difference was found in terms of gender of the students participating in the study ($p<0.05$). A significant difference was found between the "clinical leadership scale" (p=0,018) and "commitment to profession scale" (p<0,001) between classes. It is significantly higher in the 4th years (Table 2). The motivation (p=0,003), clinical leadership (p=0,011) and commitment to profession (p=0,001) score averages of 6th year female students were found to be significantly lower than those of 4th year students. The mean commitment to profession score of 6th year male students was found to be significantly lower than that of 4th year students (p=0,005) (Table 3). The

Table 2. Comparison of differences in terms of scales according to year

		X.	S.D.	Median	Pillai's Trace p	p
Year	**4** Empathy	64,93	±11,04	63,00		
	Motivation	39,37	±9,66	40,00		
	Clinical leadership	101,53	±14,39	105,00		0,708
	Cultural intelligence	99,52	±19,62	100,00		
	Commitment to the Profession	34,37	±6,97	35,00		0,204
	Resilience	119,81	±18,21	119,50		**0,018**
	Clinical decision making	151,75	±18,97	152,00	**0,001**	0,878
	6 Empathy	64,42	±12,37	63,00		
	Motivation	37,94	±10,75	37,00		**<0,001**
	Clinical leadership	97,23	±18,68	100,00		
	Cultural intelligence	99,17	±20,74	97,00		0,141
	Commitment to the Profession	30,77	±8,26	32,00		0,962
	Resilience	116,87	±17,06	118,00		
	Clinical decision making	151,56	±22,14	152,00		

MANOVA, X: Mean, S.D.: Standard Deviation

Table 3. Comparison of scales by year when the effect of gender is controlled

			X.	S.D.	Median	Pillai's Trace p	p
Female	4	Empathy	64,94	±11,84	62,00		
		Motivation	40,02	±9,59	40,00		0,489
		Clinical leadership	103,19	±13,95	106,00		
		Cultural intelligence	96,96	±19,93	96,00		**0,003**
		Commitment to the Profession	36,15	±6,16	36,00		
		Resilience	122,36	±16,44	122,00		**0,011**
		Clinical decision making	153,11	±18,97	152,00	**0,001**	0,777
	6	Empathy	63,72	±7,76	62,00		
		Motivation	34,98	±10,58	35,00		**0,001**
		Clinical leadership	96,29	±18,56	97,00		
		Cultural intelligence	97,97	±22,78	97,00		0,540
		Commitment to the Profession	32,05	±8,21	32,50		
		Resilience	120,50	±19,98	123,00		0,395
		Clinical decision making	155,78	±17,79	159,00		
Male	4	Empathy	64,92	±10,45	63,00		
		Motivation	38,89	±9,73	40,00		0,950
		Clinical leadership	100,29	±14,64	104,00		
		Cultural intelligence	101,44	±19,25	102,00	**0,026**	0,326
		Commitment to the Profession	33,03	±7,26	33,00		
		Resilience	117,90	±19,27	117,00		0,352
		Clinical decision making	150,73	±18,99	152,00		
	6	Empathy	64,99	±15,17	63,00		0,661
		Motivation	40,35	±10,34	39,00		
		Clinical leadership	98,00	±18,88	102,00		**0,005**
		Cultural intelligence	100,17	±18,99	96,50		
		Commitment to the Profession	29,72	±8,20	30,00		0,124
		Resilience	113,90	±13,68	112,00		
		Clinical decision making	148,11	±24,74	148,00		0,435

MANCOVA, X: Mean, S.D.: Standard Deviation

relationship between the scale scores for 4th and 6th years is given in Table 4. Positive relationships were detected between the scales.

Table 4. Evaluation of the relationships between the scores of the scales in terms of classes

Year			Empathy	Motivation	Clinical leadership	Cultural intelligence	Commitment to the Profession	Resilience	Clinical decision making
4	Empathy	r	1,000	0,190**	0,113	0,119	0,225**	0,070	0,108
		p	.	0,006	0,103	0,088	0,001	0,314	0,120
	Motivation	r		1,000	0,154*	0,169*	0,474**	0,336**	0,197**
		p		.	0,026	0,014	0,000	0,000	0,004
	Clinical leadership	r			1,000	0,353**	0,068	0,098	0,087
		p			.	0,000	0,332	0,159	0,212
	Cultural intelligence	r				1,000	-0,012	0,087	0,109
		p				.	0,860	0,211	0,118
	Commitment to the Profession	r					1,000	0,376**	0,310**
		p					.	0,000	0,000
	Resilience	r						1,000	0,212**
		p						.	0,002
	Clinical decision making	r							1,000
		p							.
6	Empathy	r	1,000	0,395**	0,134	0,072	0,285**	-0,094	0,157
		p	.	0,000	0,132	0,419	0,001	0,288	0,075
	Motivation	r		1,000	0,077	-0,010	0,419**	0,293**	0,189*
		p		.	0,391	0,913	0,000	0,001	0,032
	Clinical leadership	r			1,000	0,270**	0,092	-0,134	0,090
		p			.	0,002	0,303	0,131	0,313
	Cultural intelligence	r				1,000	-0,004	0,005	-0,061
		p				.	0,966	0,959	0,496
	Commitment to the Profession	r					1,000	0,344**	0,295**
		p					.	0,000	0,001
	Resilience	r						1,000	0,228**
		p						.	0,009
	Clinical decision making	r							1,000
		p							.

Pearson Correlation analysis

2. Qualitative findings

Table 5 lists the categories and codes of the professionalism dimensions within the scope of the research.

The most common codes in the students' common responses regarding empathy are; "empathy is needed for the person to do his job" and "empathy reacts positively to the patient". Additionally, 6th year students mentioned that when empathy is established, it has a positive response for the doctor. The most frequently encountered codes in the students' common responses regarding motivation are; the view that negativities and emotional states affect motivation and motivation is important. The most frequently encountered codes in the students' common answers regarding leadership are; "leadership is required" and "the leader needs to be in the entrepreneurial team role". While 4th-year students stated that the clinical training and internship period was insufficient and that they felt inadequate, 6th-year students stated that there was no need for leadership and that the leader should be loyal and authoritarian. The most frequently encountered codes in the students' common answers to cultural intelligence are; they hesitate to interact and use a common language. The 4th year students stated that they had a lack of knowledge about different cultures. The most frequently encountered codes in the students' common answers to professional commitment are; "professional commitment is important" and "working conditions are effective in professional commitment". The most frequently encountered codes in the students' common answers to resilience is; the effect of the positive attitude of the family is to try to solve the problems. The 4th year students stated that they received psychological support and that social support was insufficient. The most frequently encountered codes in the students' common answers to the theme of clinical decision making are; approach based on complaints and history and physical examination.

Table 5. Professionalism theme, category and code list

Theme	Category	Code
Empathy	Posit	Put in the other person's place
		Mutual understanding
	Perception of empathy	Empathy required
		No empathy required
	Approach	Positive response to the patient
		Positive response to the doctor
		Selfless approach
		Positive approach
Motivation	Attitude in progressing towards goals	Planning
		Taking a break in negative situations
		Inability to cope with the negative situation
	Professional attitude	Motivation is important
		Extrinsic motivation is important
		Intrinsic motivation is important
		Both intrinsic and extrinsic motivation are important
	Factors affecting motivation	Environmental factors
		• Negativities in working life
		• Negativities in school life
		Individual factors
		• Negativities
		• Positive situations
	Motivational sources	Environmental factors
		• Family
		• Social environment
		• Taking a role model
		Individual factors
		• Emotional
		• Academic
Clinical leadership	Professional opinion	Leadership required
		Leadership not required
	Personal characteristi	Faithful Authoritarian
		Knowledgeable Expert

Theme	Category	Code
Commitment to Profession	Career choice	Family factors
		Childhood dream
		Exam score
		Choosing unintentionally
	Factors affecting professional commitment	Working conditions
		Occupational factors
		Individual factors
		Legal factors
	Perception of commitment to the profession	The importance of professional commitment
		Professional commitment not required
		Low professional commitment
	Future Plan	Desire to be a good doctor
		Feeling adequate
		Uncertainty
		Working abroad
Resilience	Future perception	Lack of expectations/uncertainty
		Positive future expectation
		Desire to be a good doctor
	Structural style	Trying to solve problems
		Searching for alternative solutions
		Don't give a fuck
		Getting help
	Self-perception	In Balance
		Strong
		Variable
	Perception of psychological support	Can get support if needed
		He/she doesn't need support
		Getting support
	Family harmony	Positive situation in the family
		Negative situation in the family
	Social competency	Sufficient number of friends
		Adequate social support
		Inadequate social support

cs		Entrepreneurial Team Fair Communicator
	Improving services in the work environment	About the curriculum • Clinical training is inadequate • Internship duration is insufficient About working conditions • Working conditions should be arranged • Hospital is inadequate • Planning is inadequate • The number of patients is high
	Management of services in the work environment	Team is important Scheduled work Feelings of inadequacy Service related problems
Cultural intelligence	Perspective on different cultures	Feeling of lack of knowledge Culture is important Difficulty with cultural differences in the profession
	Approach to different cultures	Hesitation in interaction Using common language Feeling happy Behaving naturally in interaction

Clinical decision making	Decision making perception	Feeling inadequate Importance of effective communication Importance of experience
	Decision making approach	Approach according to complaints History and physical examination Holistic approach Evidence based medicine
	Factors affecting decision making	External factors • Patient's condition • Legal factors • Working condition • Economic factors Individual factors • Experience • Education • Personal characteristics

No objectives related to empathy and motivation were found in the examined curriculum. While there were no objectives related to clinical leadership, cultural intelligence and resilience in the curriculum the first, second and third years, it was observed that there were a limited number of objectives in the clinical training years. While there was only one objective each related to professional commitment and clinical decision-making in the curriculum of the first, second and third years, it was determined that there were a limited number of objectives related to professional dedication and many objectives related to clinical decision-making in the clinical training years.

It was observed that a limited number of objectives were expressed taxonomically in the curriculum examined. It has been determined that the taxonomically expressed objectives are achievable through education. There was an attempt to adapt the objectives in the curriculum to NNC but these criteria were not fully met. It has been determined that the curriculum is built on each other and is suitable for the student's level and needs. The philosophical bases of the examined programs are not clearly stated, but an attempt for a basis of a pragmatic understanding and progressivism educational philosophy is seen. The objectives in all curriculums support each other with other objectives in vertical and horizontal dimensions, and are compatible with the general and distant objectives. It has been determined that the objectives expressed in accordance with the taxonomy are measurable. It is also seen that the aims and objectives of the first, second and third curriculum are compatible. In the fourth, fifth and sixth curriculum, it was observed that while there was goal and objective consistency in some programs, this consistency was partially achieved in some curriculum. When the curriculum was compared with the list of basic medical practices given in NNC, it was seen that they met all nine categories included there.

Discussion

This study examines a medical school curriculum's objectives related to professionalism and the changes in students' professional behavior

before and after clinical training. Additionally, the curriculum's objectives were compared with DACEM Curriculum Evaluation Criteria.

There was no statistically significant difference between the empathy score averages of 4th and 6th-year students. However, qualitative findings showed that 6th-year students acknowledged empathy's positive impact on physicians. This indicates that medical students grasp the importance of empathy during clinical training and benefit from it. Despite empathy being recognized as an essential element of communication, the curriculum lacks a clear objective regarding empathy, hindering students' ability to fully develop this skill.

The average motivation score of 4th-year students was significantly higher than that of 6th-year students. The qualitative findings revealed that negative emotions and motivation play a key role, but the curriculum lacks an explicit objective concerning motivation.

The clinical leadership scores of 4th-year students were statistically higher than those of 6th-year students. This disparity might result from the limited clinical experience of 4th-year students, who rely on theoretical knowledge, whereas 6th-year students' hospital experiences and the lack of role models contribute to their lower leadership scores. Furthermore, the varying expectations and roles in clinical training affect students' leadership development, with 6th-year students not yet engaging in autonomous patient care. An example of this situation can be quoted as follows: "…One of the things we experience the most is the lack of materials and personnel. When we practice in the hospital, we have to do the work of some personnel. We constantly have to go somewhere to get materials or for the laboratory. The workload is very high. In addition, many different professional groups come for training and many materials are wasted unnecessarily…" (6cllgge)

When comparing cultural intelligence scores, there was no significant difference between 4th and 6th-year students. Qualitative data showed that 4th-year students expressed a lack of knowledge regarding different cultures. The curriculum only includes limited objectives related to cultural intelligence, particularly in the clinical years, and students felt uncertain when interacting with people from different cultures. Given the importance of patient-centered care, cultural diversity should be

further integrated into the curriculum, especially as graduates may work in culturally diverse regions.

The study's findings on professional commitment confirmed the quantitative results. Most participants emphasized that professional commitment is essential for their work. However, 4th-year students had significantly higher professional commitment scores than 6th-year students, likely due to the increasing pressure of preparing for the Medical Specialization Exam (TUS) and challenges in the healthcare system, such as poor working conditions, violence, and malpractice concerns. These factors contribute to anxiety and a negative attitude towards the profession. An example quote for this situation: "…I don't have any plans for the future right now, to be honest, but I still don't want to be a bad doctor. I don't want to be a doctor who tries to avoid work and whose clinical knowledge is weak. For this reason, I try to learn as much as I can, especially in the hospital. I read case studies and such. I don't study much for TUS, but I try to make the most of my time here. In order to be successful, I first want to work in an emergency department. Because when you work there for a while, it helps a lot when you start as an assistant. Experience helps a lot. After that, I have a couple of specialties in mind and I want to continue with them. I need to study for TUS. I especially need to improve my English. Because all the publications are in English. It takes a long time until they are translated into Turkish. English is important. I also started German at one point, but I didn't improve it very much…" (6pclgök)

No significant change was found in clinical decision-making skills across different years and genders. Qualitative data revealed that students approached clinical decision-making holistically, based on the patient's complaints and physical examination. Despite the curriculum containing many clinical decision-making objectives in the clinical years, there was no significant improvement between the 4th and 6th-year students' decision-making skills. This finding suggests that the expected progression in clinical decision-making does not align with the increasing number of objectives in the curriculum. All these results reveal the importance of program evaluation as the reason for the change in students' professionalism levels during medical education. Although it is not stated as a learning objective in the program, it has been revealed that professionalism

is acquired by students during medical education.

In the literature, studies examining the empathy levels of doctors and medical students show that the empathy level is medium (15), low medium (16) and above medium (17). Like these studies, the average empathy score of the participating students in this study was found to be above the average. A study found that there was no change in students' empathy levels at the beginning and end of the 4th year of clinical training (18). In another study, it was stated that students' empathy levels decreased after they started clinical education (19). The motivation score average of the students participating in the research was found to be above the average. In a study conducted with medical, nursing and midwifery students, motivation levels were found to be moderate (20). The average clinical leadership score of the students participating in the research was found to be high. Studies with similar results are available in the literature (21). The average cultural intelligence score of the students was found to be above the average. In a study conducted to determine the cultural intelligence level of doctors working in the emergency department, the cultural intelligence level of doctors was found to be high (22).

Like this study, in Aytuğ Koşan and Toraman's (12) study, the mean score of medical faculty students' commitment to the profession was found to be above the average. Like the present study, it was stated that the professional commitment levels of students before starting clinical education decreased after starting clinical training. The average resilience score of the students participating in the research was found to be slightly above the average. There are studies in the literature that show similar characteristics to the results of this study (23). The average clinical decision-making score of the students participating in the research was found to be above the average. In some studies, conducted with nursing students, findings similar to those of this study were obtained (24). In a study where the professionalism behaviors of intern doctors were evaluated with the 360-degree evaluation method, the professionalism level of intern doctors was found to be high. This can be interpreted as students gaining professional behaviors during the education process (25).

1. Suggestions

Structured mentoring programs can be created in clinics for teaching professionalism, educational activities can be organized with scenario-based simulations, improvements can be made in students' duties in the clinic, and career planning courses regarding future planning can be added to the program.

When programs are evaluated, some suggestions can be made to stakeholders (curriculum designers, faculty, policymakers). It was seen that there were very few objectives related to professionalism. While many national and international organizations determine the qualifications that a medical school graduate should have, they have also included professionalism among these qualifications. From this perspective, it is recommended that the objectives related to professionalism be increased, integrated into the curriculum both horizontally and vertically, and continuously delivered in a spiral manner in the curriculum.

In the programs, it was observed that the objectives were not arranged according to the principles of objective writing, they were not handled in accordance with the taxonomy in cognitive, affective and psychomotor domains, there was an overlap in the objectives and two/three features were expressed in the same objective. We recommend that the objectives statements be organized using the principles of objective writing. At this stage, it is deemed necessary to express the overlapping objectives one by one and each objective should express a single meaning. We also recommend that taxonomy for all objectives should be determined together with the suitable steps.

It is recommended that all faculty members plan training on how to address objectives related to professionalism. Considering the difficulty of teaching professionalism, it is recommended that practitioners support this teaching not only by teaching as a role model, but also by using different teaching methods and techniques based on the faculty infrastructure conditions.

Conclusion

Medical education is constantly developing and changing in accordance with the conditions of the day. It is essential that program evaluations are carried out continuously in order to ensure

the competence of graduates, the desired level of patient care services, and to achieve national and international standards. Determining the level of professionalism, which is one of the graduation qualifications, is also considered important in this respect. In this study, professionalism scores were average and above average. Positive relationships with each other were seen in many of these dimensions.

There were no objectives regarding empathy and motivation in the programs. Although there were a limited number of objectives related to clinical leadership, cultural intelligence, commitment to the profession, and resilience, these objectives were mostly in the clinical training years. During the clinical training years, the number of objectives for clinical decision making is quite high. In the DACEM Curriculum Evaluation Criteria, the objectives in the programs were not designed in accordance with the principles of objective writing, no taxonomy was used when determining the objectives, and there was overlap in the objectives. The philosophy on which the programs are based was not clearly stated, however the objectives are designed in accordance with the needs and expectations of the society and the level and requirements of the student.

This program evaluation study examined the level of professionalism of students and the status of having objectives related to professionalism in programs. The limitations of this study are that other elements of the program were not included and not all classes of the medical school were included. Future studies can be planned in a longitudinal manner, including all elements of the programs, addressing all classes.

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