Revista Española
de Educación Médica

UNIVERSIDAD DE MURCIA

Are doctors' soft skills adequately supported by medical curricula? A study on medical schools in Turkiye.

¿Están las habilidades blandas de los médicos adecuadamente respaldadas por los planes de estudio de medicina? Un estudio sobre las facultades de Medicina en Turquía.

Hayriye Nur Görkemli[1]*

[1] Associate Professor, Selcuk University, Faculty of Communication, Department of Public Relations and Publicity Turkiye; ngorkemli@selcuk.edu.tr; ORCID ID: 0000-0001-5506-1343

* Correspondence: ngorkemli@selcuk.edu.tr

Recibido: 2/6/26; Aceptado: 30/6/26; Publicado: 2/7/26

Abstract.

This study aims to investigate the extent to which soft skills, which are an important element that complements the technical skills of physicians, are included in the curricula of medical schools in Turkiye. The websites of all medical schools in Turkiye were accessed and the curricula of the 2023-2024 academic year were examined using the content analysis method. Based on the categories of soft skills identified by the Malaysian Ministry of Higher Education, it was analyzed whether these courses were included in the curricula and in which categories and medical education periods they were offered. It was found that all the medical schools under study had elective or compulsory soft skills courses. However, 12.3% of universities did not include a compulsory soft skills course in their curriculum. While 83% of the universities concentrated soft skills courses exclusively in the first three years of medical education, only 2.3% of medical schools spread these courses over the entire education period, including the last three years. Examining the distribution of courses by category revealed that courses in the field of 'Communication' were the most common, followed by courses in the categories of 'Ethics' and 'Lifelong Learning and Information Technologies'. Courses in the categories 'Critical Thinking and Problem Solving', 'Leadership' and 'Teamwork' were found to be significantly underrepresented. It is recommended to design the curricula of medical faculties to include all categories of soft skills and to spread them programmatically throughout the educational process.

Keywords: Soft Skills, medical education, medical curriculum, curriculum analysis.

Resumen.

El objetivo de este estudio es analizar en qué medida se incluyen las competencias sociales, un elemento importante que complementa las competencias técnicas de los médicos, en los planes de estudio de las facultades de medicina de Turquía. Para ello, se consultaron los sitios web de todas las facultades y se examinaron los planes de estudios del curso académico 2023-2024 utilizando el método de análisis de contenido. Basándose en las categorías de habilidades blandas identificadas por el Ministerio de Educación Superior de Malasia, se analizó si estos cursos se incluían en los planes de estudio, en qué categorías se ofrecían y en qué periodo de la formación médica se impartían. Se constató que todas las facultades de medicina objeto del estudio contaban con cursos de habilidades blandas, ya fueran optativos u obligatorios. Sin embargo, el 12,3 % de las universidades no incluía un curso obligatorio de habilidades blandas en su plan de estudios.

Mientras que el 83 % de las universidades concentraba los cursos de habilidades blandas únicamente en los tres primeros años de la formación médica, el porcentaje de facultades que distribuía estos cursos a lo largo de todo el periodo de formación, incluidos los tres últimos años, era solo del 2,3 %. Al examinar la distribución de los cursos por categoría, se observó que los cursos de «Comunicación» eran los más comunes, seguidos de los de «Ética» y «Aprendizaje permanente y tecnologías de la información». Se constató que los cursos de las categorías «Pensamiento crítico y resolución de problemas», «Liderazgo» y «Trabajo en equipo» estaban significativamente infrarrepresentados. Se recomienda diseñar los planes de estudios de las facultades de medicina de manera que incluyan todas las categorías de competencias no técnicas y que estas se distribuyan de forma sistemática a lo largo de todo el proceso educativo.

Palabras clave: Habilidades blandas, educación médica, currículo médico; análisis curricular

1. Introduction

Medicine is a profession that requires not only scientific knowledge and technical competence but also a broad range of personal and interpersonal competencies. Physicians communicate continuously with patients, patients' families, colleagues, and other healthcare professionals; therefore, the quality and safety of healthcare depend not only on clinical expertise but also on effective communication and other soft skills. Communication failures have been identified as one of the most common causes of problems in medical practice and may lead to inaccurate medication, incomplete patient histories, unnecessary repetition of investigations, delays in care, continuation of inappropriate treatment, increased healthcare costs, and patient harm (1–8). Conversely, effective physician communication has been associated with greater patient trust, reduced stress, better adherence to treatment, higher patient satisfaction, improved health outcomes, and fewer patient complaints and malpractice claims (9–14). In addition to improving physician–patient relationships, soft skills also facilitate effective communication among physicians and other healthcare professionals by strengthening leadership, teamwork, conflict management, and interpersonal relationships, thereby contributing to patient safety and the overall quality of healthcare delivery (15–17). Furthermore, soft skills may contribute positively to physicians' job satisfaction while also supporting effective teamwork, successful project implementation, and improved organizational performance in healthcare settings. A more comprehensive review of the literature on the role of soft skills in medical practice and healthcare communication is provided in Appendix1.

Soft skills refer to a broad range of personal and interpersonal competencies that complement technical (hard) skills and facilitate effective professional practice. In healthcare, these competencies include communication, empathy, teamwork, leadership, ethical behavior, adaptability, self-regulation, lifelong learning, and critical thinking (2, 18). Many of these competencies overlap conceptually with emotional intelligence, which refers to the ability to recognize, understand, and manage emotions in oneself and others (2). Baykan and Nacar emphasized the importance of developing empathic communication during undergraduate medical education (19). Previous studies have reported a decline in empathy scores during the later years of medical education (20–22), whereas others found no statistically significant changes throughout medical training (19, 23–25). Although the findings are not entirely consistent, they highlight the continuing importance of explicitly supporting communication and other soft skills throughout undergraduate medical education. Evidence also suggests that structured communication training and curriculum reform can significantly improve students' soft skills and patient-related outcomes (1, 12, 26).

Several frameworks have been developed to define the competencies expected of physicians and healthcare professionals. For example, Lowther et al. classified soft skills into four broad categories: life skills, interpersonal and communication skills, business management skills, and ethical skills (27-28). Among the available frameworks, the classification developed by the

Malaysian Ministry of Higher Education (MoHE) provides a comprehensive taxonomy that organizes soft skills into seven distinct domains: communication, critical thinking and problem solving, teamwork, lifelong learning and information technology, entrepreneurship, ethics, and leadership (29). Unlike competency frameworks such as CanMEDS, ACGME, or Competency-Based Medical Education, which primarily define physician roles and expected competencies, the MoHE framework was specifically designed to classify soft skills and is therefore particularly suitable for curriculum content analysis. A detailed description of the MoHE framework and its categories is provided in Appendix2.

Turkiye has one of the largest medical education systems in Europe and an expanding healthcare sector with growing international importance (30–41). Undergraduate medical education is guided by the National Core Curriculum (UÇEP), while curriculum quality is increasingly supported through accreditation standards established by the Association for Evaluation and Accreditation of Medical Education Programs (TEPDAD). Despite the increasing recognition of soft skills within contemporary medical education, no nationwide study has systematically examined how explicitly different soft skill domains are represented across undergraduate medical curricula in Turkiye using a comprehensive classification framework. Additional background information on undergraduate medical education and the healthcare system in Turkiye is presented in Appendix3.

The aim of this study was to examine the representation of soft skills courses in the curricula of all undergraduate medical programs in Turkiye. Specifically, the study investigated whether soft skills courses were included in medical curricula, the soft skill domains they represented, whether they were compulsory or elective, the phases of medical education in which they were offered, and whether differences existed between public and private universities. By providing a national overview of the explicit representation of soft skills in undergraduate medical curricula, the study is expected to contribute to future curriculum development and to inform similar evaluations in other health professions' education programs.

2. Materials and Methods

2.1 Aim of the Study

The aim of this study was to examine the representation of soft skills courses in the curricula of medical schools in Turkiye. Specifically, the study examined whether soft skills courses were included in medical curricula, which soft skill domains they represented, and during which phase of medical education they were offered. The study also investigated whether there were differences in all these data between public and private universities. Based on the findings, potential areas for improvement in medical curricula were discussed.

2.2 Methodology

Based on the list of medical faculties in Turkiye on the website of the Turkish Council of Higher Education (YOK), the websites of all medical faculties were accessed and the course syllabi of them for the academic year 2023-2024 were analyzed one by one. Using content analysis, data were collected on course titles, soft skill categories, course status (compulsory or elective), and the year(s) of medical education in which the courses were offered. In Turkiye, undergraduate medical education consists of a six-year program that is traditionally divided into a preclinical phase (Years 1–3), which primarily focuses on basic medical sciences, and a clinical phase (Years 4–6), which includes clinical clerkships and internship training. Accordingly, soft skills courses were analyzed based on whether they were offered during the preclinical phase, the clinical phase, or both. The websites of the faculties were accessed between May and July 2024.

The seven soft skill categories defined by the Malaysian Ministry of Higher Education (MoHE) (29) were adopted as the analytical framework to classify the courses because it provided a comprehensive and operational classification system, dividing soft skills into seven distinct categories during the course analysis process. Currently, various competency frameworks have been developed primarily to define physician qualifications and professional roles. Examples of these frameworks include the CanMEDS framework (developed by the Royal College of Physicians and Surgeons of Canada), the ACGME framework (developed by the Accreditation Council for Graduate Medical Education in the USA) and the CBME framework (Competency-Based Medical Education). However, the Malaysian MoHE framework was specifically designed to categorize soft skills and was therefore preferred for curriculum content analysis. Furthermore, various areas of the MoHE framework, such as communication, teamwork, leadership, ethics, critical thinking and lifelong learning, significantly overlap with the competencies emphasized in the CanMEDS and ACGME frameworks. The framework was therefore chosen as an analytical tool that enables the systematic classification and comparison of curriculum content related to soft skills across institutions, rather than as an alternative to these models.

In Turkiye, undergraduate medical education is guided by the National Core Curriculum (UCEP) and is increasingly shaped by accreditation standards established by the Association for Evaluation and Accreditation of Medical Education Programs (TEPDAD). Both frameworks outline professional and non-professional competencies expected of medical graduates. Although UCEP and TEPDAD provide nationally relevant competency and accreditation frameworks, neither was originally developed as a taxonomy for systematically categorizing soft skills within curriculum documents. Nevertheless, substantial conceptual overlap exists between the Malaysian MoHE domains and competencies emphasized in both UCEP and TEPDAD, particularly regarding communication, teamwork, professionalism, ethics, leadership, critical thinking, and lifelong learning. While the Malaysian MoHE framework additionally includes entrepreneurship as a distinct domain, most of its categories correspond closely to competencies promoted within Turkish medical education standards.

The study analyzed the curricula of the universities using the method of content analysis. This method was defined by Krippendorff (42) as 'a research technique for making replicable and valid inferences from data to their context'. Content analysis plays a crucial role in disseminating research findings and influencing future studies, policies and public perceptions (43).

To assess coding reliability, an independent researcher reviewed the curricula of the first 20 universities included in the data set. The reliability coefficient was calculated as 0.85, indicating a high level of agreement between coders and supporting the reliability of the classification process. $R = 2(C1,2)/(C1+C2)$, $0.85 = 2(17)/(20+20)$. (R: Reliability Coefficient, C1,2: Number of Common Coding by Two Researchers, C1: Number of Coding by The First Researcher, C2: Number of Coding by The Second Researcher).

2.3 Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics for Windows, Version 27.0. Descriptive statistics were used to summarize the distribution of soft skill courses across universities. Differences between public and private universities regarding the presence of soft skill categories were examined using Pearson's chi-square test. Prior to analysis, the assumptions of the chi-square test were assessed by examining expected cell frequencies. Fisher's Exact Test was additionally used when the expected frequency assumption was not fully satisfied. Statistical significance was set at $p < .05$.

2.4 Restrictions

This study covers medical schools in Turkiye. All data were obtained from the websites of the medical schools. For the schools that did not provide the current curriculum, their last year curriculum was used. The main methodological limitation of the study was that the identification and categorization of soft skill courses were based solely on course titles. Consequently, soft skill components embedded within course syllabi, learning objectives, clinical training, or other educational activities were not assessed.

2.5 Analytical Assumptions

When examining the syllabuses, it was found that some courses were given regularly at certain times each week during the semester under a unique course name, while some courses were taught as a subject in class hours spread over different weeks under the umbrella of a 'committee' given during the semester. In this second group, these courses, which included soft skills and were taught by different lecturers during the semester, were evaluated in the same way as other courses given at a specific time each week. In other words, all courses in which the subject was taught were included in the study, regardless of the number of hours and credits. Course names were accessed from the web sites, however details of course content was not studied. Therefore, courses were classified according to course titles rather than their detailed content. Although group interactions in medical courses and patient-doctor interactions might contribute to the development of soft skills, these aspects were not examined in the present study. Even though accreditation standards might influence the organization and content of medical curricula, accreditation status was beyond the scope of the analysis and was not included as an analytical variable. The study was designed to describe and compare the distribution of soft skill domains in medical curricula based on the Malaysian MoHE classification, using a standard analytical taxonomy.

3. Results

According to the records of YOK, there were 142 medical education programs in Turkiye at the time of data collection. Of these, 96 (67.6%) were affiliated with public universities and 46 (32.4%) with private universities. Four programs had not published their curricula on their institutional websites. In addition, eight newly established public medical faculties were delivering their education through affiliated universities and had not yet published independent curricula. Therefore, these 12 programs were excluded from the analysis. The final sample consisted of 130 medical education programs, of which 66.2% were public universities and 33.8% were private universities (table 1).

Table 1. Status of universities.

Status of the Universities	Frequency	Percent
Public	86	66.2
Private	44	33.8
Total	130	100.0

All medical faculties included in the study offered at least one soft skills course. However, 12.3% of institutions did not offer any compulsory soft skills courses, while 13.8% did not offer any elective soft skills courses. The proportion of institutions without compulsory soft skills courses was 10.5% among public universities and 15.9% among private universities. For elective courses, the corresponding figures were 15.1% and 11.4%, respectively. However, no statistically significant differences were found between public and private universities regarding the presence of compulsory or elective soft skills courses in their curricula (compulsory courses: $\chi^2 = 0.799$, df = 1, p

=.371; elective courses: χ^2 = 0.344, df = 1, p =.558). Table 2 and figure 1 present the distribution of compulsory and elective soft skills courses.

Table 2. Existence of compulsory and elective soft skill courses in medical faculties.

		Compulsory Soft Skill Courses			Elective Soft Skill Courses		
		None	Existed	Total	None	Existed	Total
Status	Public	9	77	86	13	73	86
	Percent	10,5	89,5	100,0	15,1	84,9	100,0
	Private	7	37	44	5	39	44
	Percent	15,9	84,1	100	11,4	88,6	100,0
Total		16	114	130	18	112	130
Percent		12,3	87,7	100,0	13,8	86,2	100

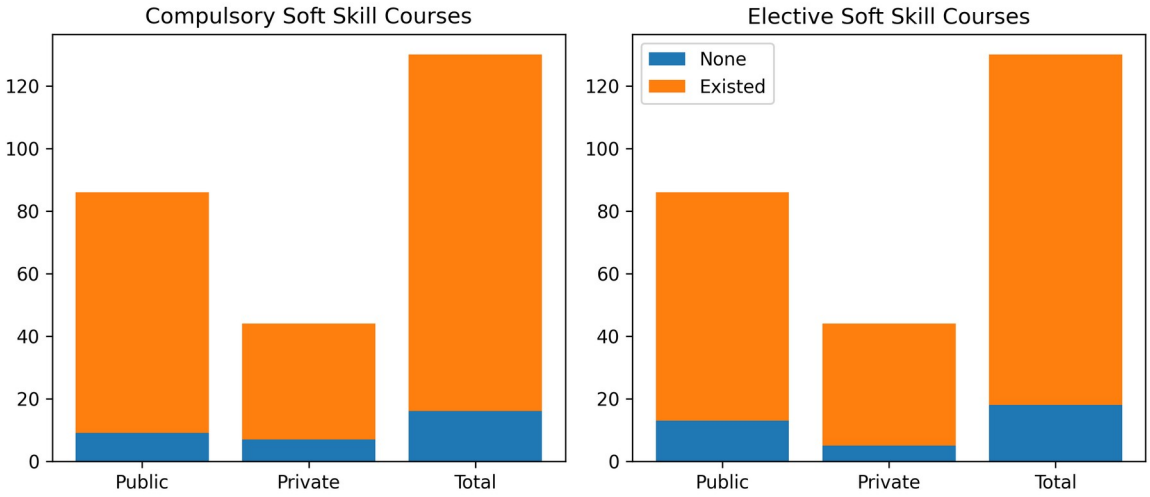

Figure 1. Existence of compulsory and elective soft skill courses in medical faculties.

The distribution of soft skills courses across the preclinical (Years 1–3) and clinical (Years 4–6) phases of medical education was subsequently examined. Overall, 83% of medical faculties offered compulsory soft skills courses exclusively during the first three years of medical education, whereas only 2.3% offered such courses exclusively during the final three years. A further 2.3% of institutions distributed compulsory soft skills courses across both phases of the curriculum. Among public and private universities, the majority offered compulsory soft skills courses only during the first three years (86.0% and 77.3%, respectively). No public universities offered compulsory soft skills courses exclusively during the clinical phase, whereas 6.8% of private universities did. Conversely, no private universities distributed compulsory soft skills courses across both phases of medical education, while 3.5% of public universities did so. A statistically significant difference was observed between public and private universities regarding the timing of compulsory soft skills courses within the curriculum (χ^2 = 8.369, df = 3, p =.039). The effect size was small to moderate (Cramer's V =.254). Inspection of the distribution suggested that this difference was primarily associated with the absence of compulsory soft skills courses during the clinical phase among public universities and the absence of courses spanning both phases among private universities.

Conversely, 72.3% of institutions offered elective soft skills courses during the first three years, 3.9% during the second three years, and 9.2% throughout the entire educational process. There was no statistically significant difference in the distribution of years in which courses were offered

between public and private universities (χ^2 = 6.255; df = 3; p =.100). Overall, soft skills education was concentrated predominantly in the first three years of medical training, whereas relatively few institutions distributed such courses throughout both phases of the curriculum (table 3, figure 2).

Table 3. Grades of offered soft skill courses.

Compulsory Soft Skill Courses		None	First Half	Second Half	Both	Total
Status	Public	9	74	0	3	86
	%	10.5	86.0	0	3.5	100
	Private	7	34	3	0	44
	%	15.9	77.3	6.8	0	100
Total		16	108	3	3	130
%		12.3	83.1	2.3	2.3	100
Elective Soft Skill Courses		**None**	**First Half**	**Second Half**	**Both**	**Total**
Status	Public	14	62	5	5	86
	%	16.3	72.1	5.8	5.8	100
	Private	5	32	0	7	44
	%	11.4	72.7	0	15.9	100
Total		19	94	5	12	130
%		14.6	72.3	3.9	9.2	100

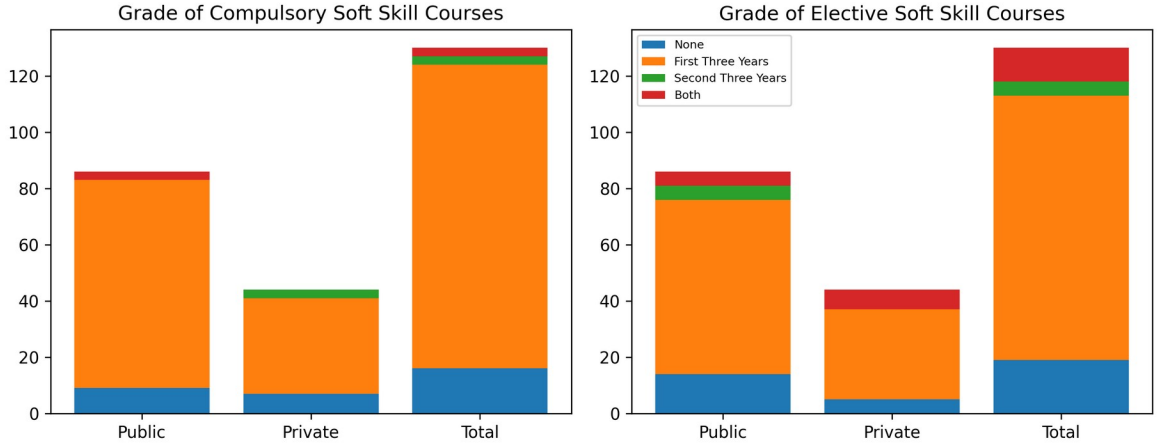

Figure 2. Grade of soft skills courses.

The next stage of the study examined the distribution of soft skills courses across the seven soft skill categories. Courses in the 'Communication' category were found in 95.4% of all universities, followed by courses in the 'Ethics' category (81.5%), 'Life Long Learning and Information Technology' category (76.9%), and 'Entrepreneurship' category (58.5%). Only 28.5% of higher education institutions (HEIs) included soft skills in 'Critical Thinking and Problem Solving', 33.8% included 'Leadership', and 50% included 'Teamwork'. The distribution of these courses among public and private universities was examined and the following results were obtained:

- Courses on 'Communication' were offered by the largest number of HEIs in both statuses. While 93% of public universities offered courses in this category, all private universities did so. No statistically significant difference was observed between public and private HEIs (χ^2 = 3.218; d f= 1; p =.073). Because one expected cell frequency was below 5, Fisher's Exact

Test was additionally performed and yielded a similar non-significant result (p =.096, two-sided).

- The proportion of HEIs offering 'Ethics' courses was similar between the two groups. While 81.4% of public medical schools offered courses in this group, 81.8% of private university medical faculties did the same. There was no statistically significant difference between medical faculties of the two types of universities (χ^2 =.003; df = 1; p =.953).
- While 72.1% of public medical schools offered courses on "LLL and Information Technology' category, 86.4% of private medical schools did so. No statistically significant difference was found between the two types of universities (χ^2= 3.339; df = 1; p =.068).
- 'Entrepreneurship' courses were offered in 57% of public universities and 61.4% of private universities. There was no statistically significant difference between the two types of universities (χ^2 =.231; df = 1; p =.631).
- While 45.3% of public university medical schools offered courses in the 'Teamwork' category, 59.1% of private medical schools did so. No statistically significant difference was found between public and private universities in terms of offering this course (χ^2 = 2.199; df = 1; p =.138).
- While only 14.0% of public universities offered courses in 'Critical Thinking and Problem Solving', the corresponding figure was 56.8% among private universities. This difference was statistically significant (χ^2 = 26.267, df = 1, p <.001) and was associated with a relatively large effect size (Phi =.45).
- 'Leadership' was among the least frequently represented categories in both public and private universities. While 25.6% of public HEIs offered courses on this subject, 50% of private universities did so. A statistically significant difference was found between public and private HEIs (χ^2 = 7.751; df = 1; p =.005), with a small–to-moderate effect size (phi =.24).

Another noteworthy finding was that at least half of the private universities offered courses in each soft skill category. In contrast, more than half of public medical schools did not offer courses in three categories: Critical Thinking and Problem Solving, Teamwork, and Leadership (table 4, Figure 3).

Table 4. Comparison of university status and existence of soft skill categories. (*) (**)

Categ.	**Public Universities**				**Private Universities**				**Total Universities**			
	Existed		None		Existed		None		Existed		None	
	F	%	F	%	F	%	F	%	F	%	F	%
A	80	93.0	6	7	44	100	0	0	124	95.4	6	4.6
B	12	14.0	74	86	25	56.8	19	43.2	37	28.5	93	71.5
C	39	45.3	47	54.7	26	59.1	18	40.9	65	50	65	50
D	62	72.1	24	27.9	38	86.4	6	13.6	100	76.9	30	23.1
E	49	57	37	43	27	61.4	17	38.6	76	58.5	54	41.5
F	70	81.4	16	18.6	36	81.8	8	18.2	106	81.5	24	18.5
G	22	25.6	64	74.4	22	50	22	50	44	33.8	86	66.2

(*) Categories are represented as follows: Communication (A), Critical Thinking and Problem Solving (B), Teamwork (C), LLL and Inf. Tech (D), Entrepreneurship (E), Ethics(F), Leadership (G). (**) Assumptions for chi-square analysis were assessed prior to testing. All contingency tables met the expected cell frequency assumption except for the Communication category. In this category, one expected cell frequency was below 5; therefore, Fisher's Exact Test was additionally performed. The result remained non-significant (p =.096), confirming the robustness of the findings.

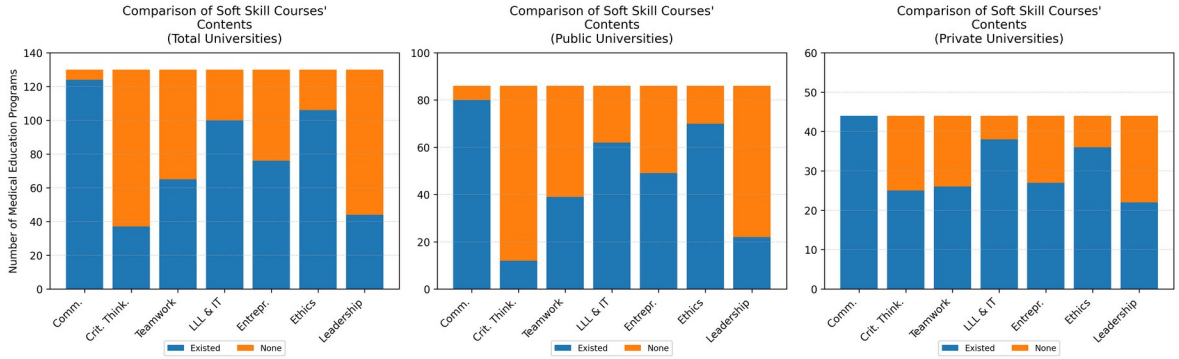

Figure 3. Comparison of university status and soft skill categories.

The next section of the study examined the names of the courses in each soft skill category and how many times they appeared in the curriculum. During the research, the course names were recorded individually and classified according to their meaning, combining similar names with slight variations.

Table 5. List of soft skills courses by category. (*)(**)

	NAME OF THE COURSES	Fr.	NAME OF THE COURSES	Fr.
A	Effective Communication Skills	78	Brand Management	5
	Behavioral Sciences	68	Creative Writing	4
	Vocational Communication Skills	35	Science/Technical Communication	4
	Diction and Effective Speaking	31	Corporate Communication	4
	Communication in Medicine	24	Social Media	3
	Presentation Techniques	21	Introd. to University Life and Life Skills	3
	Public Relations	13	Emotional Intelligence	3
	New Media and Social Relations	9	Scientific Cultural and Social Activities	3
	Interpersonal Communication	5	Protocol and Social Behavior Rules	3
	Body Language	5		
B	Disaster and Risk Management	13	Giving Bad News	4
	Stress Management	12	Crisis Communication	4
	Critical Thinking	7	Mindfulness in Coping with Stress & Burnout	3
C	Social Responsibility Projects	48	Medicine and Social Work	7
	Volunteering Activities	30	Social Volunteering in Medicine	4
	Project Management	8	Importance of Group Work in Medicine	3
D	AI in Medicine	41	New Media Techn. and Digital Broadcasting	5
	Medicine Informatics	41	Nanotechnology and Medicine	5
	Information Technologies	32	Computer Literacy	4
	Computer Skills	13	Biostatistics/Statistics	4
	Robotics Coding for Medical Students	9	Programming	3

	Web Design and Programming	9	Digital Transformation	3
	Social Media Design	9	Advanced Excel	3
	Computer Aided Design	7	Data Mining	3
	Siber Security	6		
E	Career Management	54	Innovative Thinking in Health	9
	Entrepreneurship and Innovation	45	Career Planning in Health	3
	Entrepreneurship Management	16		
F	History of Medicine and Ethics	83	Deontology	5
	Medical Ethics	26	Ethics and Professionalism	5
	Ethics	11	Clinical Ethics	3
	Ethics in Academic Researches	7		
G	Health Organizations Management	25	Medicine and Leadership	3
	Leadership	14	Managerial Skills	3
	Human Resources Management	11	Health Services Management	3
	Leadership and Motivation	3	Innovation Management	3

(*) Categories are represented as follows: Communication (A), Critical Thinking and Problem Solving (B), Teamwork (C), LLL and Inf. Tech (D), Entrepreneurship (E), Ethics (F), Leadership (G). (**) To improve readability, only course titles occurring three or more times in the dataset are presented in the main manuscript. The complete list of all identified course titles is provided in Appendix 4.

As shown in table 5, the most common course names under 'Communication' were 'Effective Communication Skills', 'Behavioral Sciences', 'Vocational Communication Skills', 'Communication in Medicine', 'Presentation Techniques' and 'Public Relations'. Courses with the content related to 'Critical Thinking and Problem Solving' were grouped under a total of 14 course names. The most common course names in this category were 'Disaster and Risk Management', 'Stress Management' and Critical Thinking'. Most of the soft skills courses on 'Teamwork' were included in the curricula under the names 'Social Responsibility Projects' and 'Volunteering Activities'. A total of 40 distinct course titles were identified in the 'Lifelong Learning and Information Technology' category. Although this category included a wide variety of course titles, a substantial proportion were concentrated in a small number of courses. The most common courses in this category were 'Artificial Intelligence in Medicine', 'Medical Informatics', 'Information Technologies' and 'Computer Skills'. Sixteen distinct course titles were identified in the Entrepreneurship category. The most common courses in this category were 'Career Management', 'Entrepreneurship and Innovation' and 'Entrepreneurship Management'. Fourteen course titles were identified in the 'Ethics' category, making it the second most frequently represented soft skill domain in the curricula. The most common course titles were 'History of Medicine and Ethics', 'Medical Ethics' and 'Ethics'. Finally, 24 course titles were identified in the category of 'Leadership.' The most common courses in this category were 'Health Organization Management', 'Leadership' and 'Human Resources Management' (table 5).

Figure 4 below shows the names of soft skills courses offered by all HEIs as a word cloud, ordered by frequency of offering. The most prominent courses were 'History of Medicine and Ethics', 'Effective Communication Skills', 'Behavioral Sciences', 'Career Management', 'Social Responsibility Projects', 'Entrepreneurship and Innovation', 'AI in Medicine', 'Medical Informatics', 'Vocational Communication Skills', 'Information Technologies', 'Diction and Effective Speaking', and 'Volunteering'.

Figure 4. Word cloud of soft skills courses in medical faculties.

4. Discussion

This study analyzed the curricula of all medical faculties in Turkiye based on the soft skills categories identified by the Malaysian Ministry of Higher Education to determine the extent to which soft skills are included in medical education curricula. The main limitation of the study is that soft skills potentially acquired implicitly through basic science and clinical courses were not examined. Instead, courses were classified solely according to their titles in the published curricula. While all medical schools were found to have at least one soft skills course, 12.3% of them did not have a compulsory soft skills course. The rate was 13.8% for elective soft skills courses. Considering that students may choose alternative elective courses, it can be inferred that some students enrolled in these programs may graduate without formal exposure to a stand-alone soft skills course. However, this finding should be interpreted with caution, as soft skills may also be developed through other curricular components, clinical training, extracurricular activities, and the hidden curriculum. Nevertheless, the findings suggest that opportunities for explicit and structured soft skills education could be further strengthened within some medical curricula.

One of the study's most striking findings was that compulsory soft skills courses were primarily offered during the first three years of medical training. Eighty-three percent of all universities offered these courses only during the first three years of medical education, whereas very few institutions distributed such courses across both the preclinical and clinical phases. 2.3% of universities offered compulsory soft skills courses in all six years of medical education. While 86% of public universities offered these courses only in the first three years, the rate was 77.3% at private universities. 3.5% of public universities spread the compulsory soft skills courses over six years of education, while none of the private universities did so. No public HEIs offered compulsory soft skills courses only in the second three years, but 6.8% of private HEIs did. Due to these differences, a statistically significant gap exists between public and private universities. Regarding elective courses, which students could choose because they were optional, 72.3% of HEIs offered them in the first three years, and 9.2% of HEIs offered them in both years. While there was no significant difference between public and private institutions in these distributions, private universities were found to be more likely to distribute electives to both semesters. The percentage of public universities that distributed elective courses with soft skills content to both semesters was 5.8%, compared to 15.9% of private universities. Considering that empathy is an important component of communication and that some studies reported declines in empathy during the later years of medical education (20, 21, 25), future research may further explore whether opportunities for structured soft skills development are sufficiently represented during the clinical phase of training.

Soft skills courses on 'Communication' were found to be available at 95.4% of all HEIs. This category was followed by 'Ethics' with 81.5%, 'Life Long Learning and Information Technology' with 76.9% and 'Entrepreneurship' with 58.5%. Only 28.5% of institutions offered courses in 'Critical Thinking and Problem Solving', 33.8% in 'Leadership' and 50% in 'Teamwork'. Although critical thinking and problem-solving skills were widely recognized as important competencies for physicians, courses explicitly addressing this domain were identified in less than one-third of medical curricula (28.5%). Similarly, leadership-related courses were identified in only 33.8% of medical curricula, suggesting that this competency may receive less explicit curricular attention than communication, ethics, and lifelong learning. Teamwork-related courses were present in half of the curricula examined, while entrepreneurship-related courses were identified in 58.5%. Given the importance attributed to leadership, teamwork, and critical thinking competencies in contemporary medical education frameworks and recent literature, their explicit representation within Turkish medical curricula appears less common than that of communication, ethics, and lifelong learning domains.

Courses on 'Communication' were included in the curricula of 93% of public universities, compared to 100% of private universities. However, there was no statistically significant difference between the two. A statistically significant difference was found in the availability of soft skills courses on 'Critical thinking and problem solving' between public and private universities. While only 14 percent of public universities offered these courses, more than half of private universities (56.8 %) included them in their curricula. Another statistically significant category was courses on 'Leadership'. 25.6% of public universities offered courses in this category, while half of private universities (50%) included this course in their curricula.

The communication soft skills courses were grouped under 46 main headings. Course titles with a high degree of similarity were merged. The most common courses in this category were 'Effective Communication Skills', 'Behavioral Sciences', 'Professional Communication Skills', 'Communication in Medicine', 'Presentation Techniques' and 'Public Relations'. The course 'Intercultural Communication', which plays a key role in preventing problems arising from intercultural differences that doctors may often encounter in their communication, was found only twice in the curricula. However, it is unclear if this topic is included in courses such as 'Effective Communication Skills', 'Professional Communication Skills', and 'Communication in Medicine'. Similarly, a critical course 'Body Language' was identified only five times in curricula. Nevertheless, it has the potential to be included in other communication courses. Conversely, the number of occurrences of 'Social Media' and 'Digital Marketing' courses in the curricula was very low (three and two respectively). It can be suggested that social media communication, which is increasingly used by physicians in contemporary healthcare practice, should be included more in curricula. Additionally, the course 'CV and Interview Techniques' is as important for doctors as it is for all professional groups. This course appeared in only one curriculum.

Courses on 'Critical Thinking and Problem Solving' were grouped under 14 main headings by combining those with very similar titles. The most common courses in this group were 'Disaster and Risk Management,' 'Stress Management,' and 'Critical Thinking.' Although 'Problem Solving Techniques' is closely related to this competency domain, it appeared only twice in medical school curricula. 'Social Responsibility Projects' and 'Volunteering Activities' were the most common courses in the 'Teamwork' category. 'Principles of Group Work' and 'Interprofessional Collaboration', both of which are directly related to teamwork competencies, appeared only twice each. In the 'Lifelong Learning and Information Technology' category, course offerings were concentrated around three subjects: 'Artificial Intelligence in Medicine', 'Medical Informatics', and 'Information Technologies'. The most common courses in the 'Entrepreneurship' category were 'Career Management', 'Entrepreneurship and Innovation', and 'Entrepreneurship Management'. Of

the 14 course titles in the 'Ethics' category, the most common was 'History of Medicine and Ethics'. Less common courses in this category were 'Ethics in Academic Research', 'Ethics in Daily Life', and 'Ethics in Artificial Intelligence'. Finally, the most common course title in the 'Leadership' category was 'Health Organization Management' (25 courses). This was followed by "Leadership" with 14 courses. Examination of the remaining course titles showed that the term 'management' appeared more frequently than the term 'leadership'.

The findings of this study indicate that soft skills have gained a place within undergraduate medical curricula in Turkiye, as all medical schools included at least one compulsory or elective course related to soft skills. This finding is consistent with international trends emphasizing the growing importance of soft skill competencies in medical education. A nationwide study conducted in Hungary reported that approximately two-thirds of health professions education institutions provided soft skills training, although substantial variation existed in implementation practices across institutions (44).

Despite the widespread presence of soft skill courses, their distribution across categories was uneven. Although leadership plays an important role in physicians' professional practice, the present study found that leadership-related competencies were among the least represented soft skill domains in Turkish medical curricula. Several studies have highlighted the importance of leadership training during medical education. A systematic review by Evans *et al.* (45) concluded that, despite its growing recognition, leadership training remains inconsistently implemented and would benefit from greater standardization within undergraduate medical education. Likewise, Nicolaou *et al.* (46) demonstrated that structured leadership education can significantly improve leadership-related competencies among medical students, while Griewatz *et al.* (47) reported that leadership roles remain insufficiently represented in eight German undergraduate medical curricula. These findings suggest that leadership education continues to represent a relatively underdeveloped area in both Turkiye and Germany. In this study, communication was the most frequently represented domain. This pattern is broadly consistent with international literature. Communication skills are increasingly recognized as a core component of undergraduate medical education, and several countries have developed structured and longitudinal communication curricula to ensure systematic competency development (48-49).

Another noteworthy finding was that soft skill education was concentrated predominantly in the preclinical years. More than four-fifths of medical schools offered soft skill courses only during the first three years of medical education, whereas very few institutions distributed such training throughout the entire curriculum. This observation is also compatible with international evidence. Evans *et al*. (45) reported that leadership training initiatives are predominantly targeted at preclinical students, despite growing recognition that longitudinal and clinically integrated approaches may be more effective. The communication curriculum developed by Schmidt *et al.* (49) similarly emphasized the value of continuous and longitudinal skill development throughout medical education. These findings, together with previous literature, may support consideration of more longitudinal approaches to soft skill development across undergraduate medical education.

Finally, teamwork and interprofessional collaboration were represented in only half of the curricula examined. Given the increasing complexity of healthcare systems, contemporary medical education literature emphasizes the importance of preparing students for collaborative practice. Interprofessional communication and teamwork have been recognized as essential competencies for patient safety, quality of care, and effective healthcare delivery (50). The relatively limited representation of teamwork-related courses identified in the present study may represent an area of further consideration in future curriculum development efforts.

This study was based on course titles in the curricula obtained from the websites of the medical faculties in Turkiye, and the course contents was beyond the scope of the analysis. Moreover, it did not capture soft skill components that might be embedded within course syllabi, learning objectives, clinical training activities, extracurricular programs, or the hidden curriculum. In addition, course credits and instructional hours were not taken into account.

A further limitation of this study is that the accreditation status of medical schools was not considered as an explanatory variable. Although Turkiye's TEPDAD (Association of Medical Education Programs Evaluation and Accreditation) standards promote students' personal and professional development, they do not explicitly prescribe the inclusion or quantity of specific soft skill domains as defined by the MoHE of Malaysia's framework. Nonetheless, accreditation processes may encourage the incorporation of soft-skill-related learning opportunities. Therefore, accreditation status may represent a potential confounding factor that could partially explain some of the observed differences between public and private universities and warrants further investigation in future studies.

These studies are broadly consistent with the rationale underlying the present study. However, unlike most previous studies that focused on individual competencies or educational interventions, the current study sought to provide a national overview of how different soft skill domains are represented across undergraduate medical curricula in Turkiye.

5. Conclusions

- This study examined the curricula of all medical faculties in Turkiye in light of the growing recognition of soft skills as an essential complement to physicians' technical competencies. Although all surveyed medical faculties offered at least one soft skills course, 12.3% did not include any compulsory soft skills course. Soft skills education was found to be concentrated predominantly in the preclinical years, with only a very small proportion of institutions extending such training throughout the entire six-year medical curriculum. While communication, ethics, and lifelong learning were widely represented, other domains such as critical thinking and problem solving, leadership, and teamwork received considerably less explicit curricular attention. Overall, the findings suggest that the representation of soft skills across Turkish medical curricula remains uneven and that opportunities exist to strengthen both the breadth and longitudinal integration of soft skills education.
- The findings suggest that greater attention could be given to the representation of different soft skill domains and to the longitudinal integration of soft skills across medical education. This study may contribute to ongoing discussions regarding the role of soft skills in undergraduate medical education curricula. Future research may extend the analysis to medical schools in other countries, enabling international comparisons and contributing to curriculum development efforts. Beyond medical education, the analytical approach adopted in this study may contribute to future curriculum evaluations in other health professions, including nursing and dentistry, where communication, teamwork, leadership, and other soft skills are increasingly emphasized.

Funding: This research did or did not receive external funding

Authors' contributions: All stages of the work were carried out by the author

Conflict of interest: There are no conflict of interests to declare.

Supplementary material: Appendix 1. Literature Background: Importance of Soft Skills in Medical Education. Appendix 2. The Concept of Soft Skills and the Malaysian MoHE Framework. Appendix 3. Undergraduate Medical Education in Turkiye. Appendix 4. List of Soft Skill Courses by Category.

6. References

1. Solet DJ, Norvell JM, Rutan GH, Frankel RM. Lost in translation: challenges and opportunities in physician-to-physician communication during patient handoffs. *Academic Medicine*. **2005**, 80 (12). 1094-1099. https://doi.org/10.1097/00001888-200512000-00005
2. Dolev N, Naamati-Schneider L, Meirovich A. Making Soft Skills a Part of the Curriculum of Healthcare Studies. In: M. S. Firstenberg, & S. P. Stawicki (Eds.). Medical Education for the 21st Century. IntechOpen. **2021**. https://doi.org/10.5772/intechopen.98671
3. Dunn SA, Markoff B. Physician-physician communication: What is the hang-up? *Journal of General Internal Medicine*. **2009**, 24 (3). 437-439. https://doi.org/10.1007/s11606-009-0913-0
4. Shannon D. Effective Physician-to-Physician Communication: An Essential Ingredient for Care Coordination. *Physician Executive*. **2012**, 38 (1). 16-21. PMID: 23885504. https://www.proquest.com/openview/7acd04f31fced51a77633fbf0e9627fc/1?pq-origsite=gscholar&cbl=36212
5. Ersoy LV. Tıbbi Malpraktis. *Bulletin of Thoracic Surgery/Toraks Cerrahisi Bülteni*. **2014**, 5 (1). 29-32. https://doi.org/10.5152/tcb.2014.004
6. Karatas M, Yakıncı C. Tıbbi Hata Nedenleri ve Çözüm Yolları. *Journal of Turgut Ozal Medical Center*. **2010**, 17 (3). 233-236. https://dergipark.org.tr/tr/pub/totm/article/157756
7. Institute of Medicine (US) Committee on Quality of Health Care in America. Kohn, L. T., Corrigan, J. M. & Donaldson, M. S. (Eds). To err is human: building a safer health system. National Academy Press. **2000**. https://doi.org/10.17226/9728
8. Leape LL, Lawthers AG, Brennan TA, Johnson WG. Preventing medical injury. *Quality Review Bulletin*. **1993**, 19 (5). 144-149. https://doi.org/10.1016/s0097-5990(16)30608-x
9. Steward MA. Effective physician-patient communication and health outcomes: a review. *Canadian Medical Association Journal*. **1995**, 152 (9). 1423-1433. https://pmc.ncbi.nlm.nih.gov/articles/instance/1337906/pdf/cmaj00069-0061.pdf
10. Beck RS, Daughtridge R, Sloane PD. Physician-patient communication in the primary care office: a systematic review. *The Journal of the American Board of Family Practice*. **2002**, 15 (1). 25-38. https://www.jabfm.org/content/jabfp/15/1/25.full.pdf
11. Ong LM, de Haes JC, Hoos AM, Lammes FB. Doctor-patient communication: a review of the literature. *Social Science and Medicine*. **1995**, 40 (7). 903-918. https://doi.org/10.1016/0277-9536(94)00155-m
12. Zolnierek KBH, DiMatteo MR. Physician Communication and Patient Adherence to Treatment: A Meta-Analysis. *Medical Care*. **2009**, 47 (8). 826–834. https://doi.org/10.1097/MLR.0b013e31819a5acc
13. Reader TW, Gillespie A, Roberts, J. Patient complaints in healthcare systems: a systematic review and coding taxonomy. *BMJ Quality and Safety*. **2014**, 23 (8). 678-689. https://doi.org/10.1136/bmjqs-2013-002437
14. Mazor KM, Reed GW, Yood RA, *et al*. Disclosure of medical errors: what factors influence how patients respond? *Journal of General Internal Medicine*. **2006**, 21, 704-710. https://doi.org/10.1111/j.1525-1497.2006.00465.x
15. Krakowski AJ. Doctor-doctor relationship. Psychosomatics: Journal of Consultation and Liaison Psychiatry. **1971**, 12 (1). 11-15. https://doi.org/10.1016/S0033-3182(71)71560-6
16. Garelick A. Fagin L. Doctor to doctor: getting on with colleagues. *Advances in Psychiatric Treatment*. **2004**, 10, 225–232. https://doi.org/10.1192/apt.10.3.225
17. Abraham TH, Stewart G. Solimeo S. The importance of soft skills development in a hard data world: learning from interviews with healthcare leaders. *BMC Medical Education*. **2021**, 21 (147). 1-7. https://doi.org/10.1186/s12909-021-02567-1
18. Murphy H. *Elsevier Education*. https://evolve.elsevier.com/education/expertise/faculty-development/the-importance-of-soft-skills-in-healthcare-professions-2/ Accessed June 2024.

19. Baykan Z, Naçar M. Tip eğitiminde örtük müfredat öğrencilerin empati düzeylerini etkilemekte midir? Longitudinal bir çalişma. *Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. **2017**, 10 (2). 775-784. https://doi.org/10.17218/hititsosbil.327003
20. Igde FA, Sahin MK. Changes in empathy during medical education: An example from Turkiye. *Pakistan Journal of Medical Sciences*. **2017**, 33 (5). 1177-1181. https://doi.org/10.12669/pjms.335.13074
21. Shariat SV, Habibi M. Empathy in Iranian medical students: measurement model of the Jefferson scale of empathy. *Medical Teacher*. **2013**, 35 (1). 913-918. https://doi.org/10.3109/0142159X.2012.714881
22. Chen DC, Kirshenbaum DS, Yan J, et.al. Characterizing changes in student empathy throughout medical school. *Medical Teacher*. **2012**, 34 (4) 305-311. https://doi.org/10.3109/0142159X.2012.644600
23. Duarte MI, Branco MC, Raposo ML, Rodrigues PJ. Empathy in medical students as related to gender, year of medical school and specialty interest. *South-East Asian Journal of Medical Education*. **2015**, 9 (1). 50-53. https://doi.org/10.4038/seajme.v9i1.97
24. Quince TA, Parker RA, Wood DF, Benson JA. Stability of empathy among undergraduate medical students: A longitudinal study at one UK medical school. *BMC Medical Education*. **2011**, 11 (90). 1-9. https://doi.org/10.1186/1472-6920-11-90
25. Baykan Z, Naçar M, Demirel SÖ. Evaluation of empathic skills and tendencies of medical students. *Academic Psychiatry*. **2011**, 35, 207–208. https://doi.org/10.1176/appi.ap.35.3.207
26. Van Staden CW, Joubert PM, Pickworth GE, *et al*. The conceptualisation of soft skills among medical students before and after curriculum reform. *South African Psychiatry Review*. **2006**, 9, 33-37. https://doi.org/10.4314/ajpsy.v9i1.30205
27. Lowther MW, McMillan WJ, Venter F. Education for actuarial quality must develop more than technical competence. *South African Actuarial Journal*. **2009**, 9, 53–73. https://doi.org/10.4314/SAAJ.V9l1.46819
28. Abu Kasim NH, Abu Kassim NL, Razak AA, *et al*. Pairing as an instructional strategy to promote soft skills amongst clinical dental students. *European journal of dental education: official journal of the Association for Dental Education in Europe*. **2014**, 18 (1) 51–57. https://doi.org/10.1111/eje.12058
29. Ministry of Higher Education. Modul pembangunan kemahiran insaniah (soft skills) untuk Institusi Pengajian Tinggi Malaysia. (Soft skills development module for Malaysian institutions of higher learning). 2nd ed. Serdang, Malaysia: Universiti Putra Malaysia Press. **2006**. ISBN 9789833663057.
30. TUIK. https://data.tuik.gov.tr/Bulten/Index?p=Dunya-Nufus-Gunu-2023-49688#::text=T%C3%Bcrkiye%2C%2085%20milyon%20279%20bin,1%2C1'ini%20olu%C5%9Fturdu Accessed November 15, 2024.
31. Ministry of Health. Sağlık İstatistikleri Yıllığı 2021 Haber Bülteni. **2022**. https://www.saglik.gov.tr/Eklenti/44131/0/saglik-istatistikleri-yilligi-2021-haber-bultenipdf.pdf?_tag1=CEC095C58B83C4D20D904937CD3F4DD544B2DA0B Accessed 11 May 2024.
32. Sag I, Zengul FD. Why medical tourists choose Turkiye as a medical tourism destination? *Journal of Hospitality and Tourism Insights*. **2019**, 2 (3). 296-306. https://doi.org/10.1108/JHTI-05-2018-0031
33. Healyj Tourism Data. https://www.ushas.com.tr/saglik-turizmi-verileri/ Accessed 10 October 2024.
34. Bulut A, Şengül H. Dünyada ve Türkiye'de Sağlık Turizmi. Yönetim, *Ekonomi ve Pazarlama Araştırmaları Dergisi*. **2019**. 3 (1). 45-62. https://doi.org/10.29226/TR1001.2019.104
35. TTB. Artan Tıp Fakülteleri Kontenjanı ve Önerilerimiz. **2023**. https://www.ttb.org.tr/haber_goster.php?Guid=42ba715e-3ffe-11ee-889b-1b907fcd8532 Accessed 15 May 2024.

36. Joint Commission on Accreditation of Healthcare Organizations https://www.jointcommissioninternational.org/who-we-are/accredited-organizations/#sort=%40aoname%20ascending&numberOfResults=50&f:@aocountry=[Turkiye Accessed 2 September 2024.
37. Medical Tourism Medical tourism index 2020–2021. MedicalTourism.com. **2021**. https://www.medicaltourism.com/mti/home Accessed 15 May 2024.
38. WTO World Trade Organization & World Bank. Statistics. **2021**. https://i-tip.wto.org/services/default.aspx Accessed 29 April 2024.
39. Times Higher Education. https://www.timeshighereducation.com/world-university-rankings/2023/subject-ranking/clinical-pre-clinical-health#!/length/25/locations/TUR/sort_by/rank/sort_order/asc/cols/stats Accessed 25 May 2024.
40. Top Universities. https://www.topuniversities.com/university-rankings/university-subject-rankings/2023/medicine?countries=tr Accessed 25 May 2024.
41. US News. https://www.usnews.com/education/best-global-universities/Turkiye/clinical-medicine Accessed 25 May 2024.
42. Krippendorff K. Content Analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. L. Worth, & L. Gross (Eds.). InterNational Encyclopedia of Communication. Oxford University Press. **1989**. http://repository.upenn.edu/asc_papers/226
43. Suri H, Clarke D. Advancements in research systhesis methods: From a methodologically inclusive perspective. *Review of Educational Research*. **2009**. 79 (1). 395-430. https://doi.org/10.3102/0034654308326349
44. Nagy, T., Fritúz, G., Gál, J. *et al.* Teaching nontechnical skills in the undergraduate education of health care professionals: a nationwide cross-sectional study in Hungary. *BMC Med Educ.* **2024**. 174. https://doi.org/10.1186/s12909-024-05164-0
45. Evans, M. A., James, E. J., Misa M. Leadership Training in Undergraduate Medical Education: A Systematic Review. *International Journal of Medical Students*. **2023**. 11 (1). 58–66. https://doi.org/10.5195/ijms.2023.1717
46. Nicolaou, N., Nicolaou, C., Nicolaou, P. *et al.* Development of a leadership and management module for the undergraduate medical curriculum. *BMC Med Educ.* **2024**. 1310 (2024). https://doi.org/10.1186/s12909-024-06004-x
47. Griewatz, J., Yousef, A., Rothdiener, M. *et al.* Are we preparing for collaboration, advocacy and leadership? Targeted multi-site analysis of collaborative intrinsic roles implementation in medical undergraduate curricula. *BMC Med Educ*. **2020**. 35. https://doi.org/10.1186/s12909-020-1940-0
48. Borowczyk, M., Stalmach-Przygoda, A., Doroszewska, A. *et al.* Developing an effective and comprehensive communication curriculum for undergraduate medical education in Poland – the review and recommendations. *BMC Med Educ.* **2023**, 645. https://doi.org/10.1186/s12909-023-04533-5
49. Schmidt, C.N., Oji, N.M., Hauer, K.E. *et al.* Development, implementation, and evaluation of the Student Optimized Learning Environment (SOLE): a longitudinal team-based communication skills curriculum for medical students. *BMC Med Educ.* **2026**, 663. https://doi.org/10.1186/s12909-026-08988-0
50. Bok, C., Ng, C.H., Koh, J.W.H. *et al.* Interprofessional communication (IPC) for medical students: a scoping review. *BMC Med Educ.* **2020**, 372. https://doi.org/10.1186/s12909-020-02296-x

Appendix 1. Literature Background: Importance of Soft Skills in Medical Education.

Soft skills, including various communication skills, are important for success in all professions, but particularly in the health sector where people are involved. In the context of health communication, physicians' communication processes involve many different groups, including patients, patients' families, colleagues, other health professionals, and administrators. Disruptions in this process can lead to irreparable problems in people's lives.

Communication failures can occur during the admission, treatment and discharge of patients. Failure in communication can lead to serious complications such as inaccurate medication, missing key elements of the patient's history, unnecessary repetition of primary investigations, patient harm, delays in care, continuation of incorrect treatment, increased length of stay and increased costs (3-4). Ersoy listed several factors of malpractice and included collaborative and interactional causes as the main reasons, among others (5). Similarly, Karatas and Yakinci classified the reasons for malpractice into three categories: human, institutional and technical (6). For human problems, he included communication problems and argumentative personality. A 1999 report by the Institute of Medicine entitled 'To Err is Human: Building a Safer Health System' stated that between 44,000 and 98,000 patients died each year in US hospitals as a result of medical errors (7). Leape *et al.* categorized medical errors under four main headings: diagnostic, treatment, preventive and other (8). The category 'other' includes communication failures, equipment failures and other system failures. Solet *et al.* noted that according to an Australian study of 28 hospitals, communication errors were the most common cause for clinical problems and they accounted for twice as many deaths as clinical inefficacy (1). Several studies have shown that effective physician-patient communication increases patients' trust in their physicians, reduces stress, improves adherence to treatment plans, and contributes to better health outcomes (9-12). In a literature review, problems related to the treatment process ranked first among patient complaints at 15.6%, while communication-related complaints ranked second at 13.7% (13). It was shown that patients were less likely to complain or sue their doctor when communication was successful (14).

Doctors' communication skills are important not only for the patient-doctor relationship, but also for communication with colleagues. During clinical activities, physicians need to establish effective relationships with their colleagues, such as consultants, emergency departments, primary care providers, house staff or end-of-shift physicians, etc. (4). According to Krakowsky, the determinants of success in communication between doctors are similar to those in doctor-patient relationships (15). Both require knowledge, experience and the possession of some positive psychological traits. Garelick and Fagin argued that personal characteristics may determine the quality of relationships between doctors (16). Personality traits such as leadership, competitiveness, tolerance, optimism, calmness and creativity were identified as factors influencing the quality of professional relationships. Abraham *et al.* emphasized the importance of effective leadership in the quality of communication between doctors (17). In order to build effective health communication between doctors, they stressed the existence of over-reliance on technology in communication and the lack of leadership training (such as conflict management, staff motivation, mentoring programs, etc.). The development of soft skills (i.e. communication skills, stress and conflict management, effective listening skills, etc.), face-to-face interaction and support for informal mentoring could facilitate effective health care. Their study showed that soft skills were necessary for effective leadership and were fundamental to creating a shared culture and sense of mission among physicians from different disciplines (17). In addition, soft skills may contribute positively to physicians' job satisfaction and support effective teamwork, successful project implementation, and improved organizational performance in healthcare settings.

Appendix 2. The Concept of Soft Skills and the Malaysian MoHE Framework.

Before defining soft skills, it may be useful to briefly describe the term 'hard skills'. Hard skills are defined as measurable, specific and teachable competencies to perform specific tasks. These skills are typically specified within formal curricula. In healthcare, understanding physiology, administering medications, treatment protocols, inserting catheters, etc. are all examples of hard skills. Soft skills, on the other hand, are harder to measure and are often associated with personal and interpersonal attributes. Despite their recognized importance, they have traditionally received less explicit curricular attention than technical competencies. Nevertheless, they play a vital role in the success of professional practice, especially in healthcare. These skills begin to develop early in life through social interactions and experiences and can continue to be shaped through education and professional training (16).

In order to be able to carry out the activities required in the health professions in a healthy way, it is necessary to have certain personal and interpersonal competencies (i.e. soft skills). Emotional self-awareness and expression, empathy and interpersonal relations, adaptability, social responsibility, flexibility, proactivity, self-regulation, stress tolerance, optimism and self-esteem, honesty, ethics, being a good team member, having time management skills and excellent communication skills are some of the required personality traits that health professionals should possess (2, 18). Many competencies commonly classified as soft skills, such as empathy, self-regulation, interpersonal communication, and teamwork, overlap conceptually with the construct of emotional intelligence, which refers to the ability to identify, use, understand and manage information in oneself and others (2).

Previous studies have reported positive associations between social and emotional competencies and various outcomes in medical practice, including doctor-patient relationships, accuracy in medical diagnosis and treatment, lower levels of patient anxiety, higher levels of patient responsiveness to treatment, increased patient satisfaction, and increased patient trust in medical staff. In recent years, it has been increasingly recognized that cognitive and professional skills are not sufficient criteria for success in medical schools and the medical profession, and many medical schools have begun to introduce admissions criteria that examine the personal and interpersonal skills of applicants (2).

Among these competencies, empathy has received particular attention in medical education research. Baykan and Nacar emphasized the importance of developing empathic communication during pre-graduate medical education (19). In the literature, there are studies that show a decrease in empathy scores in the last years of medical education compared to the first years (20-22), as well as studies that found no statistically significant change in students' empathy levels over the years of medical education (19, 23-25). Given that some studies have reported a decline in empathy during the later years of medical education, the continuity of communication- and empathy-related educational activities throughout the curriculum may deserve further consideration.

Although many soft skills begin to develop early in life, they can also be strengthened through education and training. Solet *et al.* (1) stressed the importance of training to improve communication skills. Zolnierek and DiMatteo showed that providing communication training to physicians lead to significant improvements in patient compliance (12). According to their study, physicians who received physician communication training achieved higher levels of patient adherence than those who did not. Another study examined changes in students' soft skills before and after curriculum reform at a medical school that added soft skills to curriculum. The study found that the revised curriculum had a significant impact on students' ability to apply soft skills (26).

Lowther et al. classified soft skills into four main categories: life skills, interpersonal and communication skills, business management and ethical skills (27). Life skills include organizational skills, self-management, research, analysis, problem-solving and a commitment to lifelong learning. Interpersonal communication skills include listening, negotiating, conflict management and teamwork. Business management skills include comprehensive planning, entrepreneurship, motivation, delegation and leadership. Lastly, ethical skills include several skills such as honesty, objectivity, serving the public interest, being socially responsible and abiding by the law (28). The Malaysian Ministry of Higher Education has extensively specified different areas of soft skills under seven main categories. These are communication, critical thinking and problem solving, teamwork, lifelong learning and information technology, entrepreneurship, professional ethics and morals, and leadership (29). Table 6 below shows these areas and the elements of each.

Table 6. Table of soft skill categories (According to 2006 Malaysian MoHE classification).

SOFT SKILLS	ELEMENTS
Communication	- The ability to present ideas clearly, effectively and confidently, in both oral and written forms -The ability to practice active listening skills and provide feedback - The ability to present clearly with confidence and appropriate to the level of the listener - The ability to use technology in presentations - The ability to negotiate and reach an agreement - The ability to communicate with others from different cultures - The ability to develop interpersonal communication skills - The ability of use non-verbal communication
Critical thinking and problem solving	- The ability to identify and analyze problems in complex and vague situations, as well as to make justified evaluations - The ability to develop and improve thinking skills such as to explain, analyze and evaluate discussions - The ability to find ideas and alternative solutions - The ability to think out of the box - The ability to make decisions based on concrete evidence1 - The ability to persevere as well as to fully concentrate on a given task - The ability to understand and to fit in with the culture of the community and new work environment
Teamwork	- The ability to build to good relations, interact with others and work effectively with them to achieve the same objectives - The ability to understand and interchange roles between that of a team leader and a team member - The ability to recognize and respect the attitude, behavior and beliefs of others - The ability to contribute towards the planning and coordination of the team's efforts - Be responsible for the group's decision
Lifelong	- Able to search and manage relevant information from different sources

learning (LLL) and inform. technol.	- Able to accept new ideas and the capability for autonomous learning - Able to develop a curious mind and the thirst for knowledge
Entrepreneurial	- Able to identify business opportunities - Able to outline business frameworks - Able to build, explore and seize business and work - Able to work independently
Profess. ethics and morals	- Able to recognize the effects on the economy, environment and socio culture in professional practice - Able to analyze and make decisions in solving problems related to ethics - Able to practice ethically, apart from being responsible towards the society
Leadership	- Have the knowledge of basic leadership theory - Able to lead a Project - Able to understand and interchange roles between that of a team leader and a team member - Able to supervise team members

This classification, which is also used in various scientific studies in the literature, will be used as a basis in the analysis section of this study. The following section examines the extent to which the curricula of medical faculties in Turkiye include courses to develop the soft skills of future doctors. First, a brief overview of the health sector in Turkiye is given, followed by information on medical education in the country. Finally, the curricula of medical faculties in Turkiye are analyzed.

Appendix 3. Undergraduate Medical Education in Turkiye.

Turkiye, one of the largest countries in the region in terms of both territory and population, has a well-developed healthcare system and has become an important destination for healthcare services. According to the Turkish Statistical Institute, with a population of 85,279,553, Turkiye ranks 18th among 194 countries in terms of population size (30). Based on 2021 data, the number of public hospitals affiliated to the Ministry of Health in Turkiye is 908, the number of private hospitals is 571, and the number of university hospitals is 68 (31). Turkiye is a country with significant potential for health tourism due to its historical and natural beauties, strategic location at the crossroads of three continents, thermal water resources, low price advantages and health facilities with advanced infrastructure. Turkiye's strategic action plan for 2010-2014 prioritized the development of health tourism, and legislative reforms were introduced to support this objective. Turkiye is considered one of the leading destinations for health tourism alongside countries such as Costa Rica, India, Israel, Malaysia, Mexico, Singapore, South Korea, Taiwan, Thailand and the United States. In health tourism, patients come to Turkiye mainly from Saudi Arabia, Kuwait, Qatar, the United Arab Emirates, Germany, England, the Netherlands, Italy, Spain and France (32). According to 2023 data, a total of 1,538,643 people came to Turkiye to receive healthcare services, generating healthcare tourism revenues of USD 3,006 million. In the second quarter of 2024, the number of patients coming to Turkiye for healthcare services totaled 801,723 people, generating revenues of USD 1,621,922 thousand (33). The main areas in which incoming patients receive services are: gynecology, internal medicine, ophthalmology, medical biochemistry, general surgery, dentistry, orthopedics and traumatology, infectious diseases and otolaryngology (33-34).

According to Higher Education Council of Turkiye (YOK), there were 142 medical faculties in the country as of 2024. 96 of these faculties are affiliated to public universities and 46 to private

universities. These figures indicate that Turkiye has one of the highest numbers of medical faculties in Europe. Several European countries with comparative population sizes have substantially fewer medical faculties. For example, there are 43 medical faculties in Germany, 47 in Italy, 44 in Spain, 54 in France and 61 in Ireland (35). In Turkiye, 36 of the public medical faculties and eight of the private medical faculties are accredited by TEPDAD (Association for Evaluation and Accreditation of Medical Education Programs) (35). The number of medical faculties accredited by JCI (Joint Commission International) in Turkiye is 38 (36). Some hospitals are affiliated with renowned medical centers such as Harvard Medical School and Johns Hopkins Medicine (37; 38). According to Times Higher Education rankings, 11 Turkish medical faculties were ranked among the world's top 800 institutions in 2022 (39). Similarly, the QS World University Rankings placed 10 Turkish medical faculties among the world's top 700 institutions (40). Furthermore, the ninth edition of the U.S. News Best Global Universities ranking, supported by Clarivate and based on Web of Science data from 2022-2023, included 20 Turkish universities among the world's top 1000 in clinical medicine (41).

Appendix 4. List of Soft Skill Courses by Category.

Table 7. List of soft skill categories by Category. (*)

	NAME OF THE COURSES	Fr.	NAME OF THE COURSES	Fr.
A	Effective Communication Skills	78	Drama and Communication	2
	Behavioral Sciences	68	Visual Communication Design	2
	Vocational Communication Skills	35	Understanding Society and Culture	2
	Diction and Effective Speaking	31	Intercultural Communication	2
	Communication in Medicine	24	Awareness in Understanding Relations	2
	Presentation Techniques	21	Empathic Communication	2
	Public Relations	13	Academic Communication	2
	New Media and Social Relations	9	Political Communication	2
	Interpersonal Communication	5	Sustainable Communication	2
	Body Language	5	Social Activities	1
	Brand Management	5	Awareness in Learning Behaviors	1
	Creative Writing	4	Stakeholder Communication	1
	Science/Technical Communication	4	Communication and Sports	1
	Corporate Communication	4	Media Literacy	1
	Social Media	3	Communication Skills in Clinical Educ.	1
	Introd. to University Life and Life Skills	3	Communication Problems and Their Causes	1
	Emotional Intelligence	3	Effective Communication Techniques	1
	Scientific Cultural and Social Activities	3	Health Law and Communication	1
	Protocol and Social Behavior Rules	3	Business Communication	1
	Analysis Techniques in Media Commun.	2	Game Communication	1
	Digital Marketing	2	Perception Management	1
	Popular Culture and Media	2	CV and Interview Techniques	1
	Communication and Sports	2	Discussion Techniques	1
B	Disaster and Risk Management	13	Decision Making Techniques	2
	Stress Management	12	Ability to Positive Thinking	1

	Critical Thinking	7	Difficult Patient Management	1
	Giving Bad News	4	Family Counselling	1
	Crisis Communication	4	Negotiation and Struggle	1
	Mindfulness in Coping with Stress&Burnout	3	Prejudice and Violence	1
	Problem Solving Techniques	2	Conflict Management	1
C	Social Responsibility Projects	48	Importance of Group Work in Medicine	3
	Volunteering Activities	30	Interprofessional Collaboration	2
	Project Management	8	Group Work Principles	2
	Medicine and Social Work	7	Environment and Social Responsibility	1
	Social Volunteering in Medicine	4		
D	AI in Medicine	41	Software	2
	Medicine Informatics	41	Robotic Medicine	2
	Information Technologies	32	Database Management	2
	Computer Skills	13	Introduction to Web Technologies	1
	Robotics Coding for Medical Students	9	Digital Logic Design	1
	Web Design and Programming	9	Algorithmic Thinking	1
	Social Media Design	9	Thinking Like Computer	1
	Computer Aided Design	7	Internet of Things	1
	Siber Security	6	E-Medicine Applications	1
	New Media Techn. and Digital Broadcasting	5	Short Film Making	1
	Nanotechnology and Medicine	5	Data Science	1
	Computer Literacy	4	Biomedical Technology	1
	Biostatistics/Statistics	4	Technology and Innovation in Health	1
	Programming	3	Digital Age and Industry 4.0	1
	Digital Transformation	3	Multimedia Systems	1
	Advanced Excel	3	Web Technologies	1
	Data Mining	3	Big Data	1
	Medicine and LLL	2	Innovative Technologies in Medicine	1
	Digital Technologies in Health	2	SPSS	1
	Digital Game Design	2	Cloud Technology	1
E	Career Management	54	Entrepreneurship and Marketing	2
	Entrepreneurship and Innovation	45	Business Life and Career	1
	Entrepreneurship Management	16	Entrepreneurship and Health Organization	1
	Innovative Thinking in Health	9	New Media and Entrepreneurship	1
	Career Planning in Health	3	Invest. Decision Analysis in Entrepreneurship	1
	Entrepreneurship and Career Planning	2	Jobs in Future	1
	Financing Entrepreneurship	2	Entrepreneurship and Technology	1
	Social Entrepreneurship and Sustainability	2	Technoinvestment	1
F	History of Medicine and Ethics	83	Genetic Counselling and Ethics	2
	Medical Ethics	26	Ethics and Daily Life	1

	Ethics	11	Education of Values	1
	Ethics in Academic Researches	7	Ethics of AI	1
	Deontology	5	Ethics and Professional Values	1
	Ethics and Professionalism	5	Sustainability and Professional Ethics	1
	Clinical Ethics	3	Evidence Based Medicine and Ethics	1
G	Health Organizations Management	25	Current Approaches to Management	2
	Leadership	14	Management and Organization	2
	Human Resources Management	11	Intercultural Leadership	2
	Leadership and Motivation	3	Analytical Thinking Medic. and Leadership	1
	Medicine and Leadership	3	Modern Management Theories	1
	Managerial Skills	3	Long Term Organization Management	1
	Health Services Management	3	Management in Service Sector	1
	Innovation Management	3	Event Management	1
	Being a Leader Physician	2	Current Approaches in Health Manag.	1
	Business Management	2	Management of Change	1
	Quality and Strategic Management	2	Basics in Management	1
	Management and Strategy	2	Management Politics	1

(*) Categories are represented as follows: Communication (A), Critical Thinking and Problem Solving (B), Teamwork (C), LLL and Inf. Tech (D), Entrepreneurship (E), Ethics(F), Leadership (G)