

A comprehensive analysis of academic performances of emergency medicine departments in Türkiye

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Abstract

In this study, we aimed to compare Emergency Departments (EDs) of both State and Foundation Universities in order to reveal the status of Emergency Medicine in the scientific environment. We performed a hand search on Google Scholar for citation numbers, h-indexes and i-10 indexes for each academician in the EDs. A total of 77 State Universities and 19 Foundation Universities were involved in our study. In Türkiye, there are 134 professors, 143 associate professors and 184 assistant professors in the field of Emergency Medicine. Of these, 384 (83.2%) were male, 77 (16.8%) were female. According to h-index metrics; Sağlık Bilimleri Üniversitesi Adana Tıp Fakültesi was on the top of the list, followed by Kocaeli Üniversitesi Tıp Fakültesi and Gaziantep Üniversitesi Tıp Fakültesi. Top 3 Foundation University EDs were as follows: i) Bezm-i Âlem Vakıf Üniversitesi Tıp Fakültesi, ii) Biruni Üniversitesi Tıp Fakültesi, and iii) Başkent Üniversitesi Tıp Fakültesi. State universities are more successful than foundation universities in academic terms. The number of female emergency medicine academics is much lower than that of males. There are many clinics in the Turkish emergency medicine academic world that do not have professorial faculty members, and this problem is especially prominent in foundation universities.

Key words: emergency medicine, h-index, academic performance.

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Introduction

Organizational activities consider performance as an important concept in achieving the objectives. Performance not only indicates success and another see it as goal-directed activities.^{1,2} Numerous measurement methods have been developed based on either financial perspective or non-financial indicators for this purpose. Governments and other stakeholders give more concern to the performance of higher institution since success of universities in a country may give an idea about the level of development of the country. Governments aim and try to allocate greater funding support from their budgets for universities in order to achieve good research output and high placement in ranking. There are numerous scientific indexes investigating academic productivity of universities and academicians. Some of the famous tools are QS World University Rankings, Times Higher Education World University Ranking, ARWU and Ranking Web of Universities (Webometrics). These tools are designed to determine university performance that pushes competitions in the global higher education and assess global university performance.¹ However, these indexes have been designed to make a comparison of universities and academicians regardless of a specific specialty. To our knowledge, a study investigating academic performance of EDs in Türkiye has not been performed, yet. For this comparison, we extracted number of citations, h-index (the largest number of h such that h publications have at least h citations) and i-10 index (the number of publications with at least 10 citations) available on

Google Scholar official site for each ED academician in Türkiye.³ In this study, our aim was to investigate performances of academicians working in the field of Emergency Medicine in Türkiye and contribute to the scientific competition between them.

Materials and Methods

For this study, we determined the State and Foundation Universities with medical schools in Türkiye. Then, we extracted data on EDs of these schools from their official sites (number of academicians and titles of the academicians). We, then, performed a hand search on Google Scholar for citation numbers, h-indexes and i-10 indexes of each academics (last access to Google Scholar on January 2nd, 2025). “h-index” was introduced by Hersch in 2005 to measure the importance, significance, and broad impact of a scientist’s articles. A scientist with an index of h has published a number of papers (h), each of which has been cited by others at least h times.⁴ For each ED, these parameters were added and divided to number of academicians in order to determine academic productivities of EDs (Mean citation number: Number of total citations of academicians in a department/Number of academics in a department). Our data also allowed us to make a comparison of state universities and foundation universities in terms of number and title of academicians, and their academic performances.

Medical schools without an official internet site Medical Schools without an ED on their official site, and academicians

without a Google Scholar account were excluded from the study. In case any of the academics in an ED do not have a Google Scholar account in a particular ED, this university was also excluded from the study. The data were analyzed using Statistical Package for the Social Sciences (SPSS) and given as numbers and percentages. An ethical approval was obtained from a Local Ethics Comitee (Decision No: 10-09 on 11/06/2025).

Results

As of the year 2025, there are a total of 84 State Medical Schools and 31 Foundation Medical Schools (a total of 115) in Turkey. One of the State University Medical School was excluded due to lack of an ED available on the official internet site (İstanbul University, İstanbul School of Medicine). Hence, a total of 83 State Medical Schools were included into the study. Also, data on Emergency Medicine was not available for 8 Medical Schools in foundation universities in terms of Emergency Medicine (Altınbaş, Bahçeşehir, Haliç, Atlas, Okan, İzmir Ekonomi, KTO Karatay and TOBB Ekonomi ve Teknoloji). So, 23 foundation medical schools were involved into the study. From both State and Foundation Universities, academicians without Google Scholar account were excluded from the study.

As a result, a total of 77 State Universities and 19 Foundation Universities were involved in our study.

According to our results, there is a total of 461 (male: 384 (83.2%), female: 77 (16.8%)) Emergency Medicine academicians in Türkiye. Of these; 134 are professors (124 in State Universities (92.5%), 10 in foundation Universities (7.4%)), 143 are associate professors (136 in State Universities (95.1%), 7 in foundation universities (4.8%)) and 184 assistant professors (145 in state universities (78.8%), 39 in foundation universities (21.1%)).

Of 461 academicians, 143 (30.8%) are not involved in Google

Scholar (115 in State Universities, 28 in Foundation Universities).

When the number of academicians was considered, SBU Hamidiye ED was on the top of the list with 50 academicians (8 professors, 23 associate professors, 19 assistant professors).

Of the 83 State Medical School EDs, 29 do not have any professors (34.9%) and of the 23 foundation Medical School EDs, 14 do not have professors (60.8%). While 7 state universities have only assistant professors (8.4%), 10 foundation universities have only assistant professors (43.4%) in EDs.

When academic performances of the EDs according to Google Scholar data were investigated, it was determined that mean h-index of State University EDs was 8.9, mean citation number was 553.6 and mean i-10 index was 11.2. According to h-index metrics; Sağlık Bilimleri Üniversitesi Adana Tıp Fakültesi was on the top of the list (h-index: 20.5, mean number of citations: 1340, i-10 index: 46.5). In the second line of the list, there was Kocaeli University School of Medicine (h-index: 19.2, mean number of citations: 1188.2, i-10 index: 33.2). Gaziantep University School of Medicine was in the third row (h-index: 18.6, mean number of citations: 1365.6, i-10 index: 36.3). It was determined that h-indexes of 34 state universities remained below 10 (57.1%). The list of State University EDs according to h-indexes is presented in Supplementary Materials, Table 1.

On the other hand, when mean values of Foundation University EDs were investigated, it was determined that mean h-index of was 7.5, mean citation number was 316.4 and mean i-10 index was 8.2. Top 3 Foundation University EDs were as follows: (1) Bezm-i Âlem Vakıf Üniversitesi Tıp Fakültesi (h-index: 15.5, mean number of citations: 1237, i-10 index: 28), (2) Biruni Üniversitesi Tıp Fakültesi (h-index: 14, mean number of citations: 629, i-10 index: 18), (3) Başkent Üniversitesi Tıp Fakültesi (h-index: 12, mean number of citations: 532, i-10 index: 14). Fourteen Foundation Universities had h-indexes below 10 (73.6%). The list of Foundation University EDs according to h-indexes is presented

Table 1. Comparison of Emergency Departments of Foundation Universities According to h-index, number of citations and i-10 index in Google Scholar Database.

	Emergency Departments of Foundation Universities	h-index	Citations	i-10 index
1	Bezm-i Âlem Foundation University School of Medicine	15,5	1237	28
2	Biruni University School of Medicine	14	629	18
3	Başkent University School of Medicine	12	532	14
4	İstinye University School of Medicine	12	479	19
5	Koç University School of Medicine	10	509	10
6	Ankara Medipol University School of Medicine	9	395.5	10
7	İstanbul Medipol University School of Medicine	9	395.5	10
8	Maltepe University School of Medicine	8	207	6
9	Atılım University School of Medicine	7	206	5
10	Ufuk University School of Medicine	6,5	194.5	4,5
11	Lokman Hekim University School of Medicine	6	347	6
12	Acıbadem Mehmet Ali Aydınlar University School of Medicine	6	209	5
13	İstanbul Aydın University School of Medicine	6	129.5	4
14	Üsküdar University School of Medicine	6	118	3
15	Yeditepe University School of Medicine	5,6	208	5,3
16	Yüksek İhtisas University School of Medicine	5,5	168	6
17	İstanbul Sağlık ve Teknoloji University School of Medicine	2	27	2
18	İstanbul Yeni Yüzyıl University School of Medicine	2	18	1
19	Beykent University School of Medicine	1	3	0

in Table 1. We also extracted top 20 scientists according to their h-indexes and citation numbers in the field of Emergency Medicine and presented them with their institutions in Table 2.

Discussion

Since students are currently being treated as customers, performance measurement has become vital for academic environments. As stakeholders' expectations increase, competition between universities becomes more intense.^{5,6} The major expectation of students is high-quality service. On the other hand, universities aim to maintain graduates producing high-quality profile. As graduates are competent in their professional fields, they can suit the developing societal difficulties more easily.⁷

Academic performance of scientists may be evaluated through bibliometrics that included the total number of publications and the total number of citations.⁸ Total paper counts do not reflect research quality and citation numbers do not provide an accurate measurement, Hirsch proposed the "h-index" in 2005 which focuses on importance, significance and impact of the authors as a useful index to characterize the scientific output of a researcher.^{4,9,10} Therefore, we used the h-index in our study due to its easy accessibility and wide acceptance by the scientific world.

Google Scholar gives significantly higher h-index scores for scientists compared to other databases.¹¹ Google Scholar counts citations from all journals found on the web, while WOS and Scopus only count citations in a more restricted subset of journals that these indices include.¹² However, the h-index is the most reliably calculated bibliometric index across the three databases.¹¹ The reason why we used Google Scholar database was that it yields broader and more comprehensive coverage for most disciplines

from publishers, professional societies, and university repositories that allow access. Unlike WOS and Scopus, Google Scholar is free and provides unbiased retrievals of citations across disciplines.¹² Since it is a platform open to all users, the performance of academics can be followed more easily by ordinary people and colleagues.

The first striking finding of our study is that men virtually dominate the emergency medicine community and the number of female academicians is very low. This finding may be due to gender inequality and difficulties experienced by women in participating in academic life, however, the specific difficulties of emergency medicine may also be the reason why women are hesitant to choose this branch. According to the Higher Education Institution (YÖK); The rate of female researchers in higher education was 42.3% in EU countries and 43.2% in Türkiye in 2022.¹³ It is seen that the number of women in Emergency Medicine academia is quite below this number.

Emergency medicine is a relatively new branch in Türkiye and still has a long way to go. Even so, our study shows that, from an academic perspective, it is far from where it should be. Compared to other branches, emergency medicine's contribution to the literature is very inadequate. According to AD Scientific index published in 2023, there are only 32 Emergency Medicine academics in Türkiye Top 10000 Scientists List.¹⁴

Additionally, considering all emergency medicine academics, mean h-index is below 10. Women have made significant gains in academic studies. It may also be stated that many fields that were dominated by men in the mid to late twentieth century are now mostly in the hands of women.¹⁰ However, our study revealed that the representation of female researchers in the field of emergency medicine in Türkiye remains at a very low level.

The fact that the number of female academics is much lower

Table 2. Top 20 Emergency Medicine Academics labeled as "acil tip" in Google Scholar (Last accessed on March 16th, 2025).

Ranking	Affiliation	Number of citations
1	İstanbul Education and Research Hospital	3852
2	Süleyman Demirel University	2594
3	Gaziantep University	2314
4	Selçuk University	2211
5	Sağlık Bilimleri University	1549
6	Aksaray University	1419
7	Cerrahpaşa School of Medicine	1400
8	Medicana Hospital	1266
9	Alanya Alaaddin Keykubat University	1262
10	Adana City Hospital	1252
11	Ondokuzmayıs University	1251
12	Alanya Alaaddin Keykubat University	1220
13	Necmettin Erbakan University	1172
14	Çukurova University	1157
15	Atatürk Sanatoryum Hospital	1133
16	Hatay Mustafa Kemal University	1021
17	Ege University	940
18	Pamukkale University	902
19	Kastamonu University	895
20	Cumhuriyet University	886

than it should be may be due to gender inequality, but it can also be explained by the fact that emergency medicine conditions in our country are much heavier than in similar countries.

Limitations

Our study also has some limitations. Since Google Scholar is a dynamic database, results may vary in studies conducted in other time periods. Authors who are not members of Google Scholar may cause differences in results. Another limitation of our study is that the comparison of emergency clinics was conducted independently of whether or not the institutions had Emergency Medicine Fellowship Programs. In our study, a detailed analysis of faculty members could not be conducted due to difficulties in accessing the data. Future studies should include this analysis to allow for a more detailed comparison of the academic performance of faculty members. Another limitation of our study is our inability to determine whether all academics are involved in patient care processes in emergency department settings. Many factors influence the academic performance of teaching staff (such as the presence or absence of a fellowship program in the clinic, or the workload within the department). However, this information has been overlooked due to a lack of access to it.

Conclusions

Measuring academic performance provides a good opportunity to identify scientists' contributions to their fields as well as to see their shortcomings. The contribution of emergency medicine to the literature in our country is far from the desired level. The writing of quality articles by Emergency Medicine academics and their publication in quality journals will ensure that emergency physicians, who have made outstanding contributions to the country's health services, will also take the place they deserve in the scientific platform. In our country, it is seen that there is a problem not only in the number of academics but also in the distribution of academics according to their seniority. We see that the existing problems have increased even more in Foundation Universities. We know that academicians working in the field of medicine have to fulfill numerous duties such as conducting scientific research, giving lectures, contributing to health care, and serving on committees when necessary. Creating a suitable environment where academics can spend more time on scientific studies and taking measures to protect their professional motivation will help Emergency academics take the place they deserve in the scientific world. As the number of medical schools increases, the number of professors and associate professors per institution decreases. As a result, more than half of the state universities have an h-index below 10. As the quality of faculty members increases, universities will be ahead of the competition and will be preferred by more national and international students.

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Online supplementary materials

Table 1. Comparison of Emergency Departments of State Universities According to h-index, number of citations and i-10 index in Google Scholar Database.

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