





## Comparison of Characteristics and Performances of Emergency Medicine Journals Published in Turkey: Where Do We Stand?

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### Abstract

**Background:** To our knowledge, the performances of Emergency Medicine (EM) journals have not been investigated in terms of contribution to scientific literature. This study, aimed to reveal the characteristics of EM journals and compare them in terms of their qualitative and quantitative features.

**Material and Method:** Conducted a hand-searching on the websites of 8 EM journals. Also categorized the articles published in these journals into subgroups in terms of relevance to trauma and disaster medicine, cardiovascular and cardiology emergencies, pulmonary emergencies, toxicology, COVID-19, surgical emergencies, internal medicine/gastroenterological emergencies, medical treatment and marker studies, resuscitation and airway management, infectious diseases, sedation and analgesia, imaging, neurological emergencies, forensic medicine, epidemiological and statistical studies, hospital and emergency department management, intensive care and mechanical ventilation, prehospital care, experimental studies, elective surgery and surgical complications. The journals were also compared according to their contribution to COVID-19 literature.

**Result:** Among 8 journals, only *Ulus Travma Acil Cerrahi Derg* is indexed in SCI-E. The top 3 journals according to the number of published articles and citations were as follows: *Ulus Travma* (1792 articles, 7834 citations), *EAJEM* (784 articles, 822 citations) and *TJEM* (646 articles, 3146 citations). Mean citation per article was the highest in *TJEM* (n=4.87) followed by *Ulus Travma Acil Cerrahi Derg* (n=4.37) and *EAJEM* (n=1.05). *Ulus Travma Acil Cerrahi Derg* has the highest H index (n=25).

**Conclusion:** Academic development of EM is strongly linked to the performance of EM journals. The quality, amount and number of grant-supported research should increase in EM.

**Keywords:** Emergency Medicine Journals, publications, citations, COVID-19.

### Introduction

Governments, funding agencies and promotion committees, and academic institutions are increasingly interested in measuring the research quality and productivity of individual scientists as an indication of their scholarly excellence. Citation rating using data from the Institute for Scientific Information (ISI), owned by the Thomson Corporation of Toronto, is now a popular method to evaluate the impact on the scientific community of individual scientists and research institutions. The argument is that the greater the value of the article, the more times it will be cited, and that the citation number is thus viewed as a direct measure of the recognition that this publication has had in its scientific field (1). Although there is obviously considerable debate regarding the value of citation rates, the analysis of citation rates may give an encyclopedic review of citation frequency and key areas of scientific interest. Emergency Medicine (EM) has undergone substantial developments in the past few decades and is now evolving at a rapid pace. However,

a systemic analysis of top-cited articles in the field of EM is not yet available (2).

Emergency medicine (EM) is a relatively young but rapidly developing field. Emergency Medicine journals play a significant role in the increase in the number of EM scientific studies. In order to achieve this goal, academic performance and the growing impact of these journals must enhance. In concordance, the quality and quantity of EM scientific studies have increased substantially in the past (2).

The Emergency Medicine Residency Programme was first initiated at Cincinnati University in 1972 (1). In Turkey, with the efforts of Prof Dr Namık Çevik, who was the rector of 9 Eylül University, Emergency Medicine took its place as a separate discipline in the speciality charter on April 30th, 1993. Subsequently, in 1994, Emergency Medicine Department was founded at 9 Eylül University and began to receive its first students (2).

The Emergency Medicine Association of Turkey was established by Dr John Fowler in 1995. In 2001, the Turkish Journal of Emergency Medicine started its publication life

(1). In this article, our aim was to evaluate and compare the quality and scientific performance of 8 journals associated with EM published in Turkey.

## Materials and Methods

For this study, have reviewed emergency medicine journals published in Turkey since 1995. Emergency Medicine Journals published in Turkey were selected from the official site of Scopus© and the official sites of Emergency Medicine Associations. A total of 8 journals were determined. These journals were the Turkish Journal of Emergency Medicine (TJEM), Eurasian Journal of Emergency Medicine (EAJEM), Journal of Emergency Medicine Case Reports (J Emerg Med Case Rep), Anatolian Journal of Emergency Medicine (Anatolian J Emerg Med), Eurasian Journal of Critical Care (Eurasian J Crit Care), Eurasian Journal of Toxicology (Eurasian J Tox), Global Emergency and Critical Care (Glob Emerg Crit Care) and Turkish Journal of Trauma and Emergency Surgery (Ulus Travma Acil Cerrahi Derg). The information about the journals, (foundation date, publication frequency, language, publication type, affiliated international publisher, indexing and abstracting, cite score, publication policy, etc..) was obtained from their official sites. Categorized the articles published in these journals into subgroups in terms of relevance to trauma and disaster medicine, cardiovascular emergencies, pulmonary emergencies, toxicology, COVID-19, cardiology emergencies, surgical emergencies, internal medicine/gastroenterological emergencies, medical treatment and marker studies, resuscitation and airway management, infectious diseases, sedation and analgesia, imaging, neurological emergencies, forensic medicine, epidemiological and statistical studies, hospital and emergency department management, intensive care and mechanical ventilation, prehospital care, experimental studies, elective surgery and surgical complications. The journals were compared according to the subjects of the articles.

Also separately investigated articles on COVID-19 in Turkey and made a comparison with the Emergency Medicine Journals in the World in order to reveal where we stand regarding contribution to COVID-19 literature.

All data were entered into Excel© Programme and given as numbers and percentages. Ethical approval was not required due to the nature of the study.

## Results

According to self-findings, the first published journal in Turkey was Ulus Travma Acil Cerrahi Derg (1995) followed by TJEM (first issue in 2000) and EAJEM (published in 2003 as Academic Emergency Medicine Journal). When

the number of published articles and citation numbers in Web of Science were investigated, it was determined that Ulus Travma Acil Cerrahi Derg has published 1792 articles with a citation count of 7834 and EAJEM has published 784 articles with a citation count of 822. While 646 articles were published in TJEM, the citation count number was 3146. Mean citation per article was the highest in TJEM (n=4.87) followed by Ulus Travma Acil Cerrahi Derg (n=4.37) and EAJEM (n=1,05). Ulus Travma Acil Cerrahi Derg has the highest H index (n=25). Nevertheless, TJEM has the highest cites core (n=7) and JCI (n=0.93). While Ulus Travma Acil Cerrahi Derg was the only journal indexed in Science Citation Index Expanded (SCI-E), TJEM, EAJEM and JEMCR were indexed in Emerging Source Citation Index (ESCI). Characteristics of the journals are summarized in Table 1.

When articles published in the journals were investigated according to subjects, it was determined that the greatest proportion of articles published in TJEM was related to toxicology (n=21, 11.1%), in EAJEM to trauma (n=25, 12.7%), in J Emerg Med Case Rep to surgical emergencies (n=29, 17.8%), in Anatolian J Emerg Med to Hospital and Emergency Department Management (n=21, 16.3%), in Eurasian J Crit Care to surgical emergencies (n=18, 16.8%), in Eurasian J Tox to toxicology (n=66, 93%), in Glob Emerg Crit Care to COVID-19 (n=4, 33.3%) and in Ulus Travma Acil Cerrahi Derg to trauma and disaster medicine (n=279, 38.9%). The most popular topics were trauma, toxicology and surgical emergencies. The distribution of the subjects of the articles in each journal is summarized in Table 2.

When journals were investigated in terms of COVID-19 publications, it was determined that Ulus Travma Acil Cerrahi Derg has published the greatest number of COVID-19 articles when compared to other journals (n=33), followed by EAJEM (n=16). When COVID-19 proportion to other articles in each journal was investigated, Glob Emerg Crit Care was on top of the list (33.3%). The proportion of COVID-19 articles is presented in Table 3.

## Discussion

Citation is described as a reference to a published or unpublished source. Citation analysis is the examination of the frequency, patterns, and graphs of citations in articles and other text. It is a fact that scientifically important articles are cited more frequently. The impact of an article on its scientific field is generally measured by the number of citations since it is the only quantifiable parameter (3,4). When number of publications in Web of Science and citifactors of the articles published in EM journals in Turkey were determined, Ulus Travma Acil Cerrahi Derg had the highest number of publications in Web of Science. The reason why researchers prefer Ulus Travma Acil Cerrahi Derg is that it is indexed in SCI-E and Pubmed. In addition, new metric systems such

**Table 1:** Characteristics of the Emergency Medicine journal published in Turkey

	<i>Ulus Travma Acil Cerrahi Derg</i>	<i>TJEM</i>	<i>EAJEM</i>	<i>J Emerg Med Case Rep</i>	<i>Anatolian J Emerg Medicine</i>	<i>Eurasian J Crit Care</i>	<i>Eurasian J Tox</i>	<i>Glob Emerg Crit Care</i>
<i>First Publication Year</i>	1995	2000	2003	2010	2018	2019	2019	2022
<i>Affiliation</i>	TATES	EMAT	EPAT	EPAT	EMAT	EPAT	EPAT	TEMF
<i>Publication Frequency Per Year</i>	12	4	4	4	4	3	3	3
<i>Publisher</i>	Kare Yayıncılık	Wolters Kluwer - Medknow Publications Wolters Kluwer India Pvt. Ltd	Glenos Yayınevi	DergiPark	DergiPark	DergiPark	DergiPark	Glenos Yayınevi
<i>Indexing and Abstracting</i>	SCI-E, PubMed, Euro PMC, Scopus, ProQuest, EMBASE, CINAHL, TRDizin, Journal Citation Reports, Index Medicus	ESCI, Scopus, PubMed, EBSO, SCImago, TRDizin, Google Scholar, DOAJ, Science Direct, Türkiye Atf Dizini	ESCI, EBSO, Index Copernicus, Gale, J-Gate, DOAJ, TRDizin, DRJI, HINARI, ProQuest, AGORA, Türkiye Atf Dizini	ESCI	Google Scholar, ASOS Index, Türkiye Atf Dizini, SIS, TRDizin, EuroPub	EuroPub, SIS, DRJI, Türkiye Atf Dizini, ASOS Index	SIS, DRJI, EuroPub, Google Scholar, ASOS Index	J-Gate, Gale
<i>CiteScore (SCOPUS)</i>	1.40	7.00	-	-	-	-	-	-
<i>Journal Impact Factor(2021)</i>	0,929	-	-	-	-	-	-	-
<i>Journal Citation Indicator (2021)</i>	0,40	0,93	0,07	0,01	-	-	-	-
<i>CiteScore Category Rank (Emergency Medicine)(2021)</i>	44 (90)	5 (90)	-	-	-	-	-	-
<i>Publication (Web of Science)</i>	1792	646	784	524	0	0	0	0
<i>Citing Articles (Web of Science)</i>	7834	3146	822	178	0	0	0	0
<i>Without Self-Citations (Web of Science)</i>	7249	3076	736	155	0	0	0	0
<i>Average Citation Per Article (Web of Science)</i>	4.37	4.87	1.05	0.34	0	0	0	0
<i>H-Index (Web of Science)</i>	25	16	10	4	-	-	-	-
<i>Time to Final Decision (week)</i>	3.20	-	-	-	-	-	-	-

**Ulus Travma Acil Cerrahi Derg:** Turkish Journal of Trauma and Emergency Surgery **TJEM:** Turkish Journal of Emergency Medicine, **EAJEM:** Eurasian Journal of Emergency Medicine, **J Emerg Med Case Rep:** Journal of Emergency Medicine Case Reports, **Anatolian J Emerg Medicine:** Anatolian Journal of Emergency Medicine, **Eurasian J Crit Care:** Eurasian Journal of Critical Care, **Eurasian J Tox:** Eurasian Journal of Toxicology, **Glob Emerg Crit Care:** Global Emergency and Critical Care **TATES:** Turkish Association of Trauma and Emergency Surgery **EMAT:** Emergency Medicine Association of Turkey **EPAT:** Emergency Medicine Physicians Association of Turkey **TEMF:** Turkish Emergency Medicine Foundation **SCI-E:** Science Citation Index Expanded **EURO PMC:** Euro PubMed Central **EMBASE:** Excerpta Medica Database **CINAHL:** Cumulative Index to Nursing and Allied Health Literature **ESCI:** Emerging Science Citation Index **DOAJ:** Directory of Open Access Journals **DRJI:** The Directory of Research Journal Indexing **HINARI:** Health Inter-Network Access to Research Initiative **ASOS Index:** Akademik Sosyal Bilimler indeksi **SIS:** Science Indexing Service

as Almetric have emerged as an alternative to traditional citation systems in recent years (5). These systems are also used by Elsevier, including platforms such as Scopus and Mendeley (6). These metric systems aim to demonstrate the scientific implications of published papers. (7). TJEM had the highest Journal Citation Indicator among these journals

(n=0.93). Although TJEM is not indexed as SCI, one of the reasons why it has the highest citation index may be that it is indexed on platforms such as Scopus.

Yang Liang et al. In a study that examined the Impact Factors of emergency medicine journals between 2005 and 2014, we see that only Ulus Travma Acil Cerrahi Derg from

**Table 2:** Distribution of main topics in journals

	<i>Ulus Travma Acil Cerrahi Derg</i>	<i>TJEM</i>	<i>EAJEM</i>	<i>J Emerg Med Case Rep</i>	<i>Anatolian J Emerg Medicine</i>	<i>Eurasian J Crit Care</i>	<i>Eurasian J Tox</i>	<i>Glob Emerg Crit Care</i>
<i>Trauma and Disaster Medicine (n, %)</i>	279 (38.9)	11 (5.7)	25 (12.7)	28 (17.1)	14 (10.9)	14 (15.9)		1 (8.3)
<i>Cardiology and Cardiovascular Emergencies (n, %)</i>	3 (0.4)	15 (7.9)	15 (7.6)	14 (8.6)	12 (9.3)	6 (5.6)	1 (1.4)	1 (8.3)
<i>Pulmonary Emergencies (n, %)</i>		9 (4.7)	8 (4.1)	8 (4.9)	10 (7.8)	12 (11.2)		
<i>Toxicology (n, %)</i>		21 (11.1)	12 (6.1)	28 (17.1)	15 (11.6)	8 (7.5)	66 (93.0)	2 (16.7)
<i>COVID-19 (n, %)</i>	33 (4.6)	10 (5.2)	16 (8.1)	11 (6.7)	8 (6.2)	9 (8.4)		4 (33.3)
<i>Surgical Emergencies (n, %)</i>	164 (22.8)	16 (8.4)	12 (6.1)	29 (17.8)	13 (10.1)	18 (16.8)		1 (8.3)
<i>Internal Medicine / Gastroenterological Emergencies (n, %)</i>	22 (3.1)	8 (4.2)	11 (5.6)	17 (10.4)	10 (7.8)	13 (12.1)	1 (1.4)	
<i>Medical Treatment and Marker Studies (n, %)</i>		9 (4.7)	17 (8.6)	1 (0.6)	3 (2.3)	3 (2.8)		1 (8.3)
<i>Resuscitation and Airway Management (n, %)</i>	4 (0.6)	20 (10.5)	9 (4.6)	2 (1.2)		4 (3.7)		1 (8.3)
<i>Infectious Diseases (n, %)</i>		11 (5.8)	10 (5.1)	6 (3.7)	1 (0.8)	3 (2.8)		1 (8.3)
<i>Sedation and Analgesia (n, %)</i>		10 (5.3)	5 (2.5)					
<i>Imaging (n, %)</i>	11 (1.5)	15 (7.9)	15 (7.6)	6 (3.7)	6 (4.7)	2 (1.9)		
<i>Neurological Emergencies (n, %)</i>		12 (6.3)	9 (4.6)	13 (8.0)	8 (6.2)	11 (10.3)	1 (1.4)	
<i>Forensic Medicine (n, %)</i>	1 (0.1)	1 (0.5)	2 (1.0)					
<i>Epidemiological And Statistical Studies (n, %)</i>	9 (1.3)	6 (3.2)	1 (0.5)		2 (1.6)			
<i>Hospital and Emergency Department Management (n, %)</i>		9 (4.7)	24 (12.2)		21 (16.3)	2 (1.9)	1 (1.4)	
<i>Intensive Care and Mechanical Ventilation (n, %)</i>	7 (1.0)	6 (3.2)	1 (0.5)			1 (0.9)		
<i>Prehospital Care (n, %)</i>	3 (0.4)	1 (0.5)	4 (2.0)		6 (4.7)			
<i>Experimental Studies (n, %)</i>	98 (13.6)		1 (0.5)			1 (0.9)	1 (1.4)	
<i>Elective surgery and surgical Complications (n, %)</i>	84 (11.7)							
<b>Total</b>	718	190	197	163	129	107	71	12

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Turkey could be included in this review (8). Despite the lapse of time, the only emergency medicine journal in Turkey still published as SCI-E is *Ulus Travma Acil Cerrahi Derg*.

It is obvious that when EM journals are not included in SCI-E, the development of EM may be underestimated (9). Since most of the EM journals in Turkey are not included in SCI-E, the contribution of these journals to the literature remains low.

The progress in the academic performance of EM journals has rarely been studied in the past decade. An objective and multiperspective evaluation of the academic performance of EM journals might provide a more complete understanding of the recent evolution of EM scientific studies (9). In a study by Yi-Lun Tsai et al., the primary focus of study in EM was

found to be Toxicology, traumatology, resuscitation medicine, and cardiovascular medicine. Additionally, the median citation number for these top-cited articles was 102 (4). In this pioneering study on EM journals in Turkey, in concordance with the literature, we determined that journals particularly focused on trauma, toxicology and surgical emergencies topics.

In a study, the last 30 original studies were investigated in top EM journals. While the US made the greatest contribution (n=158, 47.9%), Australia was in the second row (n=36, 10.9%) and Canada was in the third row (n=17, 6.1%) (10). The success of Turkey in the academic EM field is highly related to the development of EM journals.

Another parameter compared in studies was the contribution of Turkish EM journals to COVID-19 literature.

**Table 3:** COVID-19 articles in journals

Journal	Total Articles	Total COVID-19 Articles	Total COVID-19 Articles/Total Articles
<i>Ulus Travma Acil Cerrahi Derg</i>	511	33	0,06
<i>TJEM</i>	112	10	0,08
<i>EAJEM</i>	130	16	0,12
<i>J Emerg Med Case Rep</i>	109	11	0,1
<i>Anatolian J Emerg Medicine</i>	82	8	0,09
<i>Eurasian J Crit Care</i>	77	9	0,11
<i>Eurasian J Tox</i>	48	0	0
<i>Glob Emerg Crit Care</i>	12	4	0,33

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It is known that since the beginning of the COVID-19 outbreak in December 2019, a substantial amount of COVID-19 medical literature has been generated. The publication of research on COVID-19 helped physicians to share knowledge and experience. In a study investigating COVID-19 publications in top EM journals by Erenler et al., The American Journal of Emergency Medicine published the greatest proportion of articles. World Journal of Emergency Surgery had the greatest number of citations per COVID-19 article.

In the mentioned article, Turkey took place in the 15th row in terms of the number of COVID-19 publications (11).

Similarly, in a study that included the most influential COVID-19 articles, Turkey was not among the top 10 countries (12). According to our results, the highest proportion of COVID-19 articles was published in EAJEM. However, the contribution of Turkey to the literature in terms of COVID-19 publications is insufficient. The main reason is already overcrowded Emergency departments in Turkey had challenges dealing with the pandemic and physicians had to focus mainly on patient care instead of scientific research (13).

## Conclusion

This study is the pioneering analysis of journals related to EM in Turkey. It was reported that when compared with the US, Europe has a fragmented system and low scientific competition. Also, in Europe, grants are limited and most of the universities need to be modernised. The quality, amount and number of grant-supported research should increase in EM in order to rival academic medicine. The protection of academic time for faculty is needed for the scholarly activity to be successful. Emergency medicine research centres of excellence must continue to develop (10). Our results revealed that Turkey could not get the place it deserved in

terms of academic performance in Emergency Medicine. The EM journals published in Turkey focus on the same topics that international journals focus on. However, the demand for publishing their research in SCI-E journals affects the behaviours of EM physicians and hinders the development of EM journals in Turkey.

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