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ORIGINAL RESEARCH

Methodological and Thematic Trends in Emergency Medicine Research: A Comparative Bibliometric Analysis of TR Dizin and Web of Science Databases, 2020–2025

Emir ÜNAL[1], Mustafa ALTUN[2]

[1] Marmara University, School of Medicine, Department of Emergency Medicine, İstanbul, Türkiye.
[2] Marmara University Pendik Training and Research Hospital, Department of Emergency Medicine, İstanbul, Türkiye.

ABSTRACT

This bibliometric analysis compared the study design distribution and topic area profile of emergency medicine publications indexed in TR Dizin and the Web of Science between 2020 and 2025. All articles and reviews published in TR Dizin emergency medicine category journals and in the Web of Science Core Collection (SCI-EXPANDED and ESCI) emergency medicine category between 2020 and 2025 were screened. Study design and topic area were manually classified by two emergency medicine specialists; inter-rater reliability was established on a pilot sample of 200 randomly selected articles (Cohen κ = 0.92). Distributional differences were assessed with chi-square test and Cramér's V; temporal trends were evaluated with Mann-Kendall trend test, with Benjamini-Hochberg false discovery rate (FDR) correction applied for multiple comparisons. A total of 21,710 publications were included (TR Dizin: n=2,390; WoS: n=19,320). Retrospective cohort studies were the most frequent design in both corpora (TR Dizin: 48.2%; WoS: 34.3%). Randomized controlled trials accounted for 2.1% of TR Dizin and 4.7% of WoS publications. Study design (χ^2=479.18, p<0.001, Cramér's V=0.149) and topic area (χ^2=328.08, p<0.001, Cramér's V=0.123) distributions differed significantly between the two corpora. Trauma and toxicology were proportionally more prevalent in TR Dizin; resuscitation and cardiac emergency were more prominent in WoS. Monotonic temporal tendencies were observed — an increasing proportion of retrospective studies and declining case reports in TR Dizin, and declining prospective designs and case-level evidence in WoS — but none reached statistical significance after Benjamini-Hochberg false discovery rate correction. Observational designs predominate in TR Dizin emergency medicine publications, with randomized controlled trials and reviews remaining proportionally limited compared with the international literature. These findings provide a baseline for identifying priority areas for strengthening national emergency medicine research capacity.

Keywords: Emergency medicine. Bibliometrics. Study design. TR Dizin. Web of Science. Turkey.

Acil Tıp Araştırmalarında Metodolojik ve Tematik Eğilimler: TR Dizin ve Web of Science Veritabanlarının Karşılaştırmalı Bibliyometrik Analizi, 2020–2025

ÖZET

Bu bibliyometrik analizde 2020–2025 yılları arasında TR Dizin ve Web of Science'ta indekslenen acil tıp yayınlarının çalışma tasarımı dağılımı ve konu alanı profili karşılaştırıldı. TR Dizin Acil Tıp kategorisi dergilerinde ve Web of Science Core Collection'da (SCI-EXPANDED ve ESCI) yayımlanan tüm makale ve derlemeler tarandı. Çalışma tasarımı ve konu alanı iki acil tıp uzmanı tarafından manuel olarak sınıflandırıldı; ölçümler arası güvenilirlik, rastgele seçilmiş 200 makaleden oluşan pilot örneklem üzerinde belirlendi (Cohen κ = 0,92). Dağılım farklılıkları ki-kare testi ve Cramér's V ile, zamansal eğilimler ise Mann-Kendall trend testi ve Benjamini-Hochberg yanlış keşif oranı (YKO) düzeltmesiyle değerlendirildi. Çalışmaya toplam 21.710 yayın dahil edildi (TR Dizin: n=2.390; WoS: n=19.320). Retrospektif kohort çalışmaları her iki veri tabanında da en sık görülen tasarım oldu (TR Dizin: %48,2; WoS: %34,3). Randomize kontrollü çalışmalar TR Dizin yayınlarının %2,1'ini, WoS yayınlarının %4,7'sini oluşturdu. Çalışma tasarımı (χ^2=479,18, p<0,001, Cramér's V=0,149) ve konu alanı (χ^2=328,08, p<0,001, Cramér's V=0,123) dağılımları iki korpus arasında anlamlı farklılık gösterdi. TR Dizin'de travma ve toksikoloji oransal olarak daha yüksek temsil edilirken WoS'ta resüsitasyon ve kardiyak aciller ön plana çıktı. TR Dizin acil tıp yayınlarında gözlemsel tasarımlar ağırlığını korumakta; randomize kontrollü çalışmalar ve derlemeler uluslararası literatüre kıyasla oransal olarak sınırlı kalmaktadır. Bu bulgular, ulusal acil tıp araştırma kapasitesinin güçlendirilmesine yönelik öncelikli alanların belirlenmesinde kanıta dayalı bir temel oluşturmaktadır.

Anahtar Kelimeler: Acil tıp. Bibliyometri. Bibliyografik Veritabanları. Araştırma tasarımı. Yayın eğilimleri.

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Dr. Emir ÜNAL
Marmara University School of Medicine,
Department of Emergency Medicine, İstanbul, Türkiye
e-mail: emirunal@gmail.com

AUTHORS' ORCID INFORMATION
Emir ÜNAL: 0000-0003-2758-8214
Mustafa ALTUN: 0000-0002-7090-8917

Emergency medicine (EM) is among the fastest-growing medical specialties worldwide, with a corresponding expansion in its scientific literature. A 10-year bibliometric analysis of the Web of Science (WoS) Emergency Medicine category covering 2010–2019 identified 32,858 articles authored by more than 85,000 researchers, with the most frequent topics including cardiovascular emergencies, resuscitation, mortality, and triage[1]. During the same period, Turkey ranked second globally with 6,595 publications, trailing only the United States[1]. A subsequent analysis of Turkish EM publications indexed in WoS EM-category journals found 4,048 studies from 10,263 authors across four journals, with an annual growth trend in both publication volume and citation count[2]. Turkey is therefore among the highest-producing countries in EM research by absolute volume[3].

Despite this productivity, analyses of publication patterns suggest that methodological diversity remains limited. A bibliometric review of Turkish EM dissertations submitted to the National Thesis Center between 1998 and 2021 found that trauma was the most common research topic (17%), and that prospective data collection and experimental design were independently associated with publication in WoS-indexed journals. Less rigorous designs therefore appear to predominate in locally published work[4]. In line with this, a bibliometric analysis of original research published in the Eurasian Journal of Emergency Medicine between 2010 and 2014 found that 54.7% of articles were retrospective, 25.7% were prospective, and only 19.6% were cross-sectional, with single-center designs accounting for 93.9% of studies[5]. A more recent analysis comparing research trends across EM journal quartiles (Q1–Q4 in SCImago) demonstrated that research focus and methodological sophistication vary substantially by journal tier: resuscitation dominated Q1 publications, while trauma and pediatric emergencies were more prevalent in lower quartiles[6].

Internationally indexed publications capture only part of a country's research output. In Turkey, a substantial body of EM research is disseminated through journals indexed exclusively in TR Dizin, the national academic citation index maintained by TÜBİTAK ULAKBİM. TR Dizin-indexed journals are the primary publication venue for a large segment of Turkish researchers, particularly early-career clinicians and those working outside academic medical centers. However, the methodological characteristics of EM research published in these journals remain unstudied. A study evaluating publication outcomes of abstracts presented at national EM congresses between 2015 and 2021 found that only 8.2% were subsequently published in indexed journals, with the majority appearing in journals without quartile rankings[7]. This suggests that the bulk of Turkish EM research activity may be captured more completely by national databases than by WoS alone.

To date, no study has systematically described and compared the study design distribution and topic area profiles of EM publications across both TR Dizin-indexed and WoS-indexed journals for a recent time period. Such a comparison would clarify whether the methodological profile of Turkish EM research in the national literature differs from that of internationally indexed work, identify areas of overrepresentation or neglect in each database, and inform future research priorities. The aim of this bibliometric analysis was therefore to describe the distribution of study designs and topic areas among EM-related publications in TR Dizin-indexed journals and WoS Emergency Medicine category journals published between 2020 and 2025, and to compare these distributions across the two corpora.

Methods

Study Design

This study was conducted as a bibliometric analysis and mapping study. Results are reported using a PRISMA flow diagram to document record identification and selection.

Search Strategy

Literature searches were performed in two separate databases. For the TR Dizin corpus, a manual advanced search was conducted in the TR Dizin portal (trdizin.gov.tr) using the abstract field with a Boolean query covering emergency department and emergency medicine synonyms in Turkish and English. Records were limited to journals indexed in the TR Dizin Emergency Medicine category and to the publication period 2020-2025. The complete verbatim search string is provided in Supplementary Material S1.

For the WoS corpus, the Core Collection (SCI-EXPANDED and ESCI) was searched using the Query Builder with a topic-field (TS=) string covering emergency department and emergency medicine synonyms. Filters applied were publication years 2020–2025, English language, Web of Science category Emergency Medicine, and SCI-EXPANDED plus ESCI indexes. This search retrieved 25,309 records. Records limited to article and review document types were downloaded (n=19,320); non-article document types (editorials, letters, corrections, and meeting abstracts) were not retrieved. All searches were conducted in January–February 2026. The complete verbatim search string and the step-by-step record counts are provided in Supplementary Material S1.

Eligibility Criteria

Articles were eligible for inclusion if they satisfied all of the following criteria: (1) published between January 2020 and December 2025; (2) indexed in the TR Dizin Emergency Medicine journal category or the WoS Emergency Medicine category (SCI-EXPANDED or ESCI); and (3) classified as an original article, review, or case report. Editorials, letters to the editor, corrections, congress abstracts, and other non-article document types were excluded from the WoS corpus at the download stage. For TR Dizin, records from journals classified exclusively in non-medical subject clusters were excluded at source, and editorial-type items (editorials, letters to the editor, and corrections) were excluded during screening. No language restriction was applied to the TR Dizin corpus; the WoS corpus was restricted to English-language records at the search stage. No geographic restrictions were applied.

Screening and Selection

Records were screened in two stages. In Stage 1, non-article document types (editorials, letters to the editor, corrections, and congress abstracts) were excluded from the WoS corpus prior to data import; for TR Dizin, records from journals classified exclusively in non-medical subject clusters were excluded at source before export. In Stage 2, all records were imported into Rayyan (Rayyan Systems Inc., Cambridge, MA, USA) and screened by two independent emergency medicine physicians based on title and abstract. Two hundred records were independently reviewed by both screeners to assess inter-rater reliability (Cohen's kappa = 0.92). Discordant cases identified in the pilot sample were resolved by consensus before proceeding to the full corpus. Following the reliability assessment, all remaining articles were coded using the same classification scheme. Discordant classifications in the full corpus were adjudicated by a third reviewer; the majority decision was adopted in all cases. Editorial-type items (editorials, letters to the editor, and corrections) in the TR Dizin corpus were excluded during screening; all records from WoS Emergency Medicine-indexed journals were retained. A PRISMA flow diagram is presented in Figure 1.

Data Extraction and Coding

For each included article, the following variables were recorded: publication year, study design, topic area, and index source (TR Dizin or WoS).

Study design was classified into eight categories: randomized controlled trial, prospective cohort, retrospective cohort, cross-sectional, case report, case series, review (including systematic review, meta-analysis, and narrative review), and other. Topic area was classified into ten categories: trauma, cardiac emergency, neurological emergency, pediatric emergency, resuscitation, respiratory emergency, toxicology, infection-sepsis, musculoskeletal, and other.

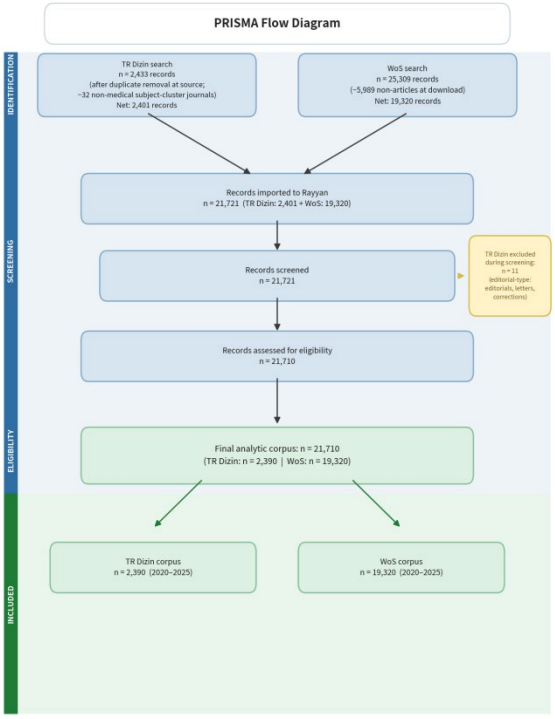


Figure 1:
PRISMA flow diagram.
Records were identified from TR Dizin (n=2,433, after duplicate removal at source) and the Web of Science Emergency Medicine category (n=19,320 articles and reviews after download-stage exclusions). Following the at-source exclusion of 32 TR Dizin records from non-medical subject clusters, 21,721 records were imported for screening; after the removal of 11 editorial-type TR Dizin records, the final analytic corpus comprised 21,710 publications (TR Dizin: n=2,390; WoS: n=19,320).

Each publication was assigned to exactly one study design and one topic area. When an abstract reported more than one design element, the design that generated the primary outcome was coded; systematic reviews, meta-analyses, and narrative reviews were always coded as Review. Topic area was coded according to the dominant clinical problem of the study population as stated in the abstract; when multiple topic areas were addressed, the topic of the primary outcome was coded. Publications whose design did not fit the seven named design categories (e.g., case–control studies, qualitative and pilot/feasibility studies, quasi-experimental and before–after designs, methodological or simulation studies) or whose subject fell outside the nine named topic areas or was non-clinical in focus were coded as "Other".

Statistical Analysis

Data were summarized as frequencies and percentages. Differences in study design and topic area distributions between TR Dizin and WoS publications were assessed using the chi-square test; Fisher's exact test was used when expected cell frequencies fell below five. Effect size was reported as Cramér's V. Mann-Kendall trend tests were applied to examine year-on-year changes in the annual proportions of each study design and topic area category across the six-year study period (n = 6 data points per test). To account for multiple temporal hypothesis testing across study design and topic area categories, p-values were adjusted using the Benjamini-Hochberg False Discovery Rate (FDR) procedure. The Mann-Kendall tau (τ) statistic is reported as a measure of trend direction and magnitude. Statistical significance was set at $p < 0.05$. All analyses were performed using jamovi (version 2.3.28; The jamovi Project, Sydney, Australia). Study design and topic area coding was completed prior to the exclusion of 11 editorial-type TR Dizin records during the final screening stage; these records were predominantly assigned to residual categories, and their exclusion did not affect the distributional conclusions for named study designs or topic areas. Proportions for TR Dizin are accordingly reported relative to the final TR Dizin corpus (n=2,390). The WoS Emergency Medicine category was not used as a clinical control group, but rather as an international benchmark corpus to evaluate how structural and thematic characteristics of national research (TR Dizin) position themselves within the global emergency medicine literature.

Results

The TR Dizin search identified 2,433 records from journals indexed in the TR Dizin Emergency Medicine category. The WoS search retrieved 25,309 records; of these, 5,989 were excluded at the download stage because they were non-article document types (editorials, letters, corrections, and meeting abstracts), leaving 19,320 articles and reviews for screening. Prior to export, 32 TR Dizin records from journals classified exclusively in non-medical subject clusters (engineering, veterinary medicine, social sciences, agriculture, and related non-clinical fields) were excluded at source. The combined dataset imported into Rayyan comprised 21,721 records (TR Dizin: n=2,401; WoS: n=19,320). During screening, 11 editorial-type TR Dizin records (editorials, letters to the editor, and corrections) were excluded. No WoS records were excluded at this stage, as all 19,320 records originated from journals formally indexed in the WoS Emergency Medicine category. The final analytic corpus comprised 21,710 publications (TR Dizin: n=2,390; WoS: n=19,320). The PRISMA flow diagram is presented in Figure 1.

Annual publication volumes are presented in Table I. WoS output increased over the study period, reaching its highest annual count in 2025 (n=3,628).

Table I. Annual publication volume by corpus (2020–2025).

Year	TR Dizin, n (%)	WoS, n (%)	Total
2020	360 (15.1%)	3,043 (15.8%)	3,403
2021	397 (16.6%)	3,563 (18.4%)	3,960
2022	431 (18.0%)	3,182 (16.5%)	3,613
2023	479 (20.0%)	2,793 (14.5%)	3,272
2024	388 (16.2%)	3,111 (16.1%)	3,499
2025	335 (14.0%)	3,628 (18.8%)	3,963
Total	2,390 (100.0%)	19,320 (100.0%)	21,710

Annual counts correspond to the final analytic corpus (TR Dizin: n=2,390; WoS: n=19,320; total n=21,710) after all exclusions.

Study design frequencies are summarized in Table II and illustrated in Figure 2. In both corpora, retrospective cohort studies were the most frequent design. Randomized controlled trials accounted for 2.1% of TR Dizin publications and 4.7% of WoS publications; reviews represented 6.4% and 15.6%, respectively.

Table II. Study design distribution by corpus.

Study design	TR Dizin, n (%)	WoS, n (%)
Retrospective cohort	1,151 (48.2%)	6,628 (34.3%)
Prospective cohort	190 (7.9%)	2,050 (10.6%)
Cross-sectional	436 (18.2%)	2,303 (11.9%)
Randomized controlled trial	51 (2.1%)	907 (4.7%)
Review	154 (6.4%)	3,008 (15.6%)
Case report	256 (10.7%)	1,604 (8.3%)
Case series	59 (2.5%)	641 (3.3%)
Other	93 (3.9%)	2,179 (11.3%)

Chi-square test: χ^2=479.18, df=7, p<0.001, Cramér's V=0.149. RCT = randomized controlled trial.

The distribution of study designs differed significantly between the two corpora (χ^2=479.18, df=7, p<0.001, Cramér's V=0.149). Retrospective cohort studies and cross-sectional studies were proportionally more prevalent in TR Dizin, whereas reviews, randomized controlled trials, and prospective cohort studies were proportionally more prevalent in WoS.

Temporal trends in study design proportions are illustrated in Figure 4. In TR Dizin, retrospective

cohort studies showed a positive monotonic trend (Mann-Kendall $\tau = 0.733$, $p = 0.060$) and case reports a consistent decline ($\tau = -1.000$, $p = 0.009$). In WoS, prospective cohort studies and case reports each showed negative monotonic trends ($\tau = -0.867$, $p = 0.024$ for both). After Benjamini-Hochberg FDR correction, none of these trends retained statistical significance.

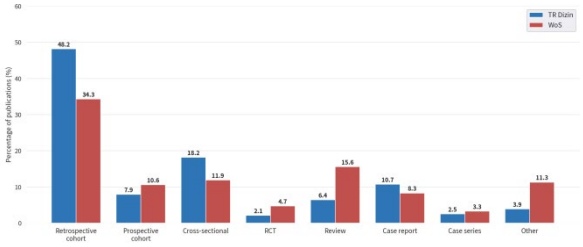


Figure 2:
Study design distribution:
TR Dizin vs. Web of Science (2020–2025). Grouped bar chart comparing the percentage distribution of eight study design categories between TR Dizin (n=2,390; blue) and WoS (n=19,320; red). Retrospective cohort was the most common design in both corpora; TR Dizin had a higher proportion of cross-sectional studies and a lower proportion of reviews than WoS.

Topic area frequencies are summarized in Table III and illustrated in Figure 3. In TR Dizin, trauma was the most frequently coded topic area (22.3%), followed by pediatric emergency (12.1%) and toxicology (8.5%). In WoS, pediatric emergency (14.1%) and trauma (14.0%) were most common, followed by resuscitation (12.5%) and cardiac emergency (10.6%).

Table III. Topic area distribution by corpus.

Topic area	TR Dizin, n (%)	WoS, n (%)
Trauma	533 (22.3%)	2,714 (14.0%)
Cardiac emergency	133 (5.6%)	2,048 (10.6%)
Pediatric emergency	288 (12.1%)	2,717 (14.1%)
Resuscitation	109 (4.6%)	2,414 (12.5%)
Infection/Sepsis	188 (7.9%)	1,323 (6.8%)
Toxicology	202 (8.5%)	1,002 (5.2%)
Neurological emergency	115 (4.8%)	690 (3.6%)
Respiratory emergency	78 (3.3%)	596 (3.1%)
Musculoskeletal	24 (1.0%)	255 (1.3%)
Other	720 (30.1%)	5,561 (28.8%)

Chi-square test: $\chi^2=328.08$, df=9, $p<0.001$, Cramér's V=0.123.

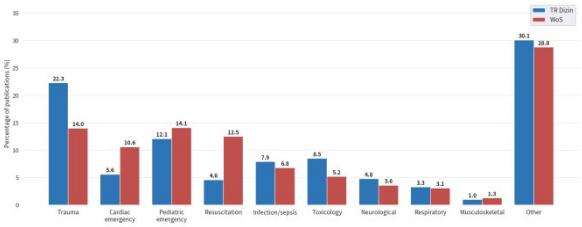


Figure 3:
Topic area distribution:
TR Dizin vs. Web of Science (2020–2025). Grouped bar chart comparing the percentage distribution of ten topic area categories between TR Dizin (n=2,390; blue) and WoS (n=19,320; red). Trauma was the most common named topic area in TR Dizin; the 'Other' category was the largest overall in both corpora.

Topic area distributions differed significantly between the two corpora ($\chi^2=328.08$, df=9, $p<0.001$, Cramér's V=0.123). Trauma and toxicology were proportionally more prevalent in TR Dizin, whereas resuscitation and cardiac emergency were proportionally more prevalent in WoS.

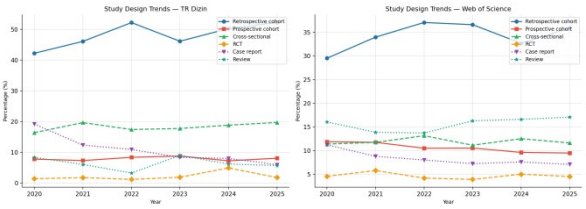


Figure 4:
Study design temporal trends, 2020–2025. Line charts showing year-by-year percentage changes for six study design categories, presented separately for TR Dizin (left panel) and Web of Science (right panel). Retrospective cohort remained dominant throughout the observation period. No temporal trend remained statistically significant after false discovery rate correction (all adjusted $p > 0.05$).

Temporal trends in topic area proportions are illustrated in Figure 5. Monotonic tendencies were observed for several categories in both corpora — including declining resuscitation and neurological emergency in TR Dizin, and declining infection/sepsis and respiratory emergency in WoS — but none retained statistical significance after Benjamini-Hochberg FDR correction (all $p_{adj} > 0.10$).

Annual publication volumes and design and topic distributions for the six EM-dedicated TR Dizin journals are presented in Tables IV–VI and Supplementary Figures A–C. The six journals together accounted for 782 publications (32.7% of the TR Dizin corpus). UTAC was the highest-volume journal (n=244); GECC began publication within the study period, with no records identified before 2022.

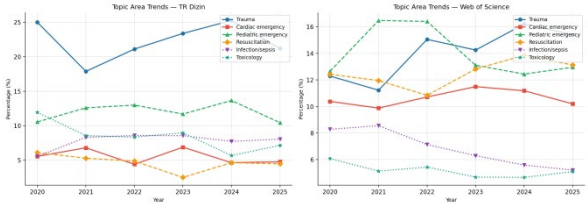


Figure 5:
Topic area temporal trends,
2020–2025. Line charts showing year-by-year percentage changes for six topic area categories, presented separately for TR Dizin (left panel) and Web of Science (right panel). No temporal trend remained statistically significant after false discovery rate correction (all adjusted p > 0.05).

Table IV. Annual publication volume by TR Dizin emergency medicine journal (2020–2025).

Journal	2020	2021	2022	2023	2024	2025	Total
UTAC	45	19	47	60	46	27	244
EJEM	18	34	26	26	30	32	166
AJEM	26	25	24	24	20	27	146
TJEM	16	22	21	23	21	20	123
GECC	—	—	13	16	15	13	57
PedEM-IC	9	9	7	6	6	9	46

UTAC = Ulusal Travma ve Acil Cerrahi Dergisi; EJEM = Eurasian Journal of Emergency Medicine; AJEM = Anatolian Journal of Emergency Medicine; TJEM = Turkish Journal of Emergency Medicine; GECC = Global Emergency and Critical Care; PedEM-IC = Pediatric Emergency and Intensive Care Journal (Çocuk Acil ve Yoğun Bakım Dergisi). GECC began publication in 2022.

Table V. Study design distribution by TR Dizin emergency medicine journal.

Study design	UTAC (n=244)	EJEM (n=166)	AJEM (n=146)	TJEM (n=123)	GECC (n=57)	PedEM-IC (n=46)
Retrospective cohort	150 (61.5%)	63 (38.0%)	54 (37.0%)	24 (19.5%)	25 (43.9%)	20 (43.5%)
Prospective cohort	16 (6.6%)	24 (14.5%)	14 (9.6%)	21 (17.1%)	6 (10.5%)	5 (10.9%)
Cross-sectional	16 (6.6%)	47 (28.3%)	23 (15.8%)	16 (13.0%)	10 (17.5%)	4 (8.7%)
Randomized controlled trial	6 (2.5%)	7 (4.2%)	1 (0.7%)	10 (8.1%)	4 (7.0%)	1 (2.2%)
Case report	37 (15.2%)	6 (3.6%)	29 (19.9%)	26 (21.1%)	7 (12.3%)	11 (23.9%)
Case series	9 (3.7%)	3 (1.8%)	—	4 (3.3%)	1 (1.8%)	4 (8.7%)
Review	2 (0.8%)	9 (5.4%)	18 (12.3%)	19 (15.4%)	4 (7.0%)	—
Other	8 (3.3%)	7 (4.2%)	7 (4.8%)	3 (2.4%)	—	1 (2.2%)

Data are presented as n (%). Chi-square test: χ^2=170.16, df=35, p<0.001, Cramér's V=0.209. RCT = randomized controlled trial.

Table VI. Topic area distribution by TR Dizin emergency medicine journal.

Topic area	UTAC (n=244)	EJEM (n=166)	AJEM (n=146)	TJEM (n=123)	GECC (n=57)	PedEM-IC (n=46)
Trauma	156 (63.9%)	27 (16.3%)	24 (16.4%)	16 (13.0%)	10 (17.5%)	4 (8.7%)
Cardiac emergency	3 (1.2%)	11 (6.6%)	14 (9.6%)	14 (11.4%)	5 (8.8%)	—
Pediatric emergency	22 (9.0%)	11 (6.6%)	8 (5.5%)	7 (5.7%)	4 (7.0%)	28 (60.9%)
Resuscitation	—	10 (6.0%)	8 (5.5%)	22 (17.9%)	—	—
Infection/Sepsis	3 (1.2%)	14 (8.4%)	14 (9.6%)	8 (6.5%)	9 (15.8%)	2 (4.3%)
Toxicology	2 (0.8%)	11 (6.6%)	17 (11.6%)	13 (10.6%)	6 (10.5%)	10 (21.7%)
Neurological emergency	2 (0.8%)	12 (7.2%)	8 (5.5%)	8 (6.5%)	—	—
Respiratory emergency	1 (0.4%)	5 (3.0%)	5 (3.4%)	12 (9.8%)	4 (7.0%)	—
Musculoskeletal	5 (2.0%)	2 (1.2%)	2 (1.4%)	—	—	—
Other	50 (20.5%)	63 (38.0%)	46 (31.5%)	23 (18.7%)	19 (33.3%)	2 (4.3%)

Data are presented as n (%). Chi-square test: χ^2=463.35, df=45, p<0.001, Cramér's V=0.344.

Study design distributions differed significantly across journals (χ^2=170.16, df=35, p<0.001, Cramér's V=0.209). UTAC had the highest proportion of retrospective cohort studies (61.5%). TJEM had the most diverse design profile, with the highest proportion of randomized controlled trials (8.1%) and a substantial proportion of reviews (15.4%) among the six journals.

Topic area distributions also differed significantly across journals (χ^2=463.35, df=45, p<0.001, Cramér's V=0.344). UTAC was dominated by trauma (63.9%) and PedEM-IC by pediatric emergency (60.9%); TJEM had the highest proportion of resuscitation-related publications (17.9%) among the six journals.

Discussion and Conclusion

This bibliometric analysis characterized the methodological and thematic profile of emergency medicine publications indexed in TR Dizin and the Web of Science between 2020 and 2025, comprising 21,710 publications. Three principal findings emerged. First, retrospective cohort studies constituted the dominant design in both corpora, yet their prevalence was substantially higher in TR Dizin (48.2%) than in WoS (34.3%), while evidence-generating designs such as randomized controlled trials and review-type articles remained proportionally

underrepresented in the Turkish national index relative to the international literature. Second, topic area distributions differed significantly between the two corpora, with trauma and toxicology accounting for a larger share of TR Dizin publications, and resuscitation and cardiac emergency more prominent in WoS. Third, descriptive temporal analyses identified monotonic trends: an increasing trajectory for retrospective studies and a declining one for case reports in TR Dizin, and declining prospective designs and case-level evidence in WoS. None of these trends reached statistical significance after correction for multiple comparisons.

Methodological Profile of TR Dizin Emergency Medicine Publications

The predominance of retrospective cohort design in TR Dizin emergency medicine publications (48.2%) is consistent with the existing literature. A prior study examining emergency medicine journals in Turkey between 2003 and 2014 (n=943) reported that 95.3% of original research articles were observational in nature, with experimental designs accounting for only 4.7% 8. The 2020–2025 data show that this pattern persisted, with prospective and experimental designs similarly limited in the national index. Randomized controlled trials accounted for only 2.1% of TR Dizin publications, compared with 9.8% reported in a bibliometric analysis of major emergency medicine journals between 2008 and 2011 9. That study, however, examined a selected set of high-impact journals rather than an entire database category. Similar patterns appear in other regional emergency medicine literatures. Observational studies constituted 75.7% of African emergency medicine publications, with interventional designs comprising only 4.4% 10, while cross-sectional design was the most frequently employed method (40.7%) in Pakistani emergency medicine research 11. One explanation for this distribution is that academic promotion requirements in Turkey — specifically, the mandatory criterion to publish in TR Dizin-indexed journals for associate professorship eligibility — create pressure toward rapidly completable observational studies rather than resource-intensive experimental work. This hypothesis cannot be directly tested with bibliometric data; direct examination of researcher publication decision-making would be required.

TR Dizin and WoS differ in study design distribution and in the structural characteristics of their respective literature bases. Reviews constituted 15.6% of WoS publications versus 6.4% in TR Dizin, and randomized controlled trials constituted 4.7% versus 2.1%, respectively. Although both chi-square tests reached statistical significance, the effect sizes were small by conventional thresholds (study design: Cramér's V = 0.149; topic area: V = 0.123). Differences between the corpora are therefore proportional rather than categorical. Within topic areas, trauma and toxicology were overrepresented in TR Dizin relative to WoS, while resuscitation and cardiac emergencies showed the opposite pattern. This disparity may partly stem from the emergency department case mix in Turkey, where trauma and poisoning constitute a substantial proportion of presentations. The prominence of resuscitation in WoS is likely driven in part by the accumulation of multicenter cardiac arrest and post-resuscitation studies in internationally indexed journals. Publication routing may also contribute: Turkish researchers may preferentially submit observational studies to TR Dizin-indexed journals while directing higher-complexity work to internationally indexed venues, in which case the lower proportion of randomized trials in TR Dizin would reflect selective submission rather than a deficit in experimental research capacity. The available data cannot distinguish between these explanations.

Temporal analyses identified monotonic but statistically non-significant trends after Benjamini-Hochberg FDR correction. In TR Dizin, retrospective cohort studies showed a descriptive upward trajectory and case reports a consistent decline; neither reached significance after correction. In WoS, both prospective cohort studies and case reports showed negative monotonic trends that likewise did not survive correction. Case-level evidence declined in both corpora, pointing to a shift from individual case reporting toward larger patient series. The trajectories were not fully parallel, however: the descriptive increase in retrospective research in TR Dizin contrasts with the decline of prospective designs in WoS, which may reflect the increasing weight of review and methodological articles in the international literature. For topic areas, potential declining trends in resuscitation and neurological emergency in TR Dizin, and in infection/sepsis and respiratory emergency in WoS, did not reach statistical significance after FDR correction. The decline in infection and respiratory emergency publications in WoS is in keeping with the normalization of output following the surge in these areas during the COVID-19 pandemic.

Methodological and thematic differences among the six TR Dizin emergency medicine journals reflect the influence of journal-level editorial orientation on the national literature profile. In UTAC, 61.5% of publications were retrospective cohort studies and 63.9% addressed trauma-related topics, a pattern in line with the journal's trauma and emergency surgery focus. By contrast, TJEM had the highest proportion of randomized controlled trials (8.1%) and resuscitation-related publications (17.9%) among the six journals, with reviews accounting for 15.4% of its output. This profile suggests a greater methodological

diversity consistent with the journal's international indexing scope. The high proportion of cross-sectional studies in EJEM (28.3%) indicates a broader emphasis on epidemiological and descriptive research. In PedEM-IC, 60.9% of publications addressed pediatric emergency topics, consistent with the journal's stated focus on pediatric emergency medicine. GECC commenced publication within the study period, with no records identified before 2022. Its four-year profile shows a predominantly retrospective design distribution. These findings indicate that the TR Dizin emergency medicine literature is not homogeneous, and that distinct methodological and thematic clusters exist at the journal level.

To our knowledge, this is the first systematic description of study design and topic area distributions in emergency medicine publications indexed in TR Dizin and WoS over the 2020–2025 period. Retrospective observational designs predominate in both corpora; randomized controlled trials and review-type articles are proportionally scarce in the national index. The largest design gap between the two corpora involves randomized trials and review-type articles; the largest topic gap involves resuscitation and cardiac emergencies, both underrepresented in the national literature. Within TR Dizin, individual journal editorial orientation substantially shaped these distributions. The findings offer a quantitative baseline for research capacity planning, specialty training, and funding allocation in Turkish emergency medicine.

Limitations

This study has several limitations. First, study design and topic area coding was performed at the title and abstract level without access to full texts. Although inter-rater reliability was established on a pilot sample of 200 randomly selected articles (Cohen $\kappa = 0.92$), misclassification of publications with insufficiently detailed abstracts cannot be excluded. Second, review subcategories (systematic reviews, meta-analyses, and narrative reviews) were aggregated into a single category to improve coding reliability, which limits more granular assessment of evidence synthesis capacity. Third, the WoS corpus was restricted to the emergency medicine category within SCI-EXPANDED and ESCI. Articles relevant to emergency medicine but indexed outside this category were not captured. Fourth, the TR Dizin Emergency Medicine category encompasses journals with diverse scope, including titles with overlapping coverage in surgery, internal medicine, and pediatrics, as well as journals exclusively dedicated to emergency medicine. This reflects the structural composition of the national index rather than a search limitation. To address this heterogeneity, a pre-specified sub-analysis was restricted to the six journals with an explicit emergency medicine editorial mandate (Tables IV–VI and Supplementary Figures A–C). The TR Dizin and WoS corpora are not directly comparable in size or scope; all cross-corpus comparisons were therefore conducted using proportional distributions rather than absolute counts. Fifth, the study period of 2020–2025 precludes direct comparison with the pre-pandemic methodological profile. Sixth, the WoS corpus is the global emergency medicine literature (including Turkish-authored publications) rather than a purely international, non-Turkish control group. The observed differences therefore reflect comparisons between the national index and the global indexed literature rather than between Turkish and non-Turkish research output. Seventh, temporal trend analyses were based on six annual observations (2020–2025), which constrains statistical power. Benjamini-Hochberg FDR correction for multiple comparisons further reduced sensitivity, and the absence of statistically significant trends should not be interpreted as evidence of stability. Mann-Kendall τ statistics are reported descriptively. Eighth, the TR Dizin corpus showed its lowest annual count in 2025 ($n = 335$). All searches were conducted in January–February 2026, and all publications indexed in TR Dizin at that time were captured. The lower 2025 count most likely reflects TR Dizin indexing characteristics for the most recently completed year, as a proportion of late-2025 submissions may have been accepted but not yet indexed at the time of data extraction. This should be considered when interpreting temporal trends for the final year of the study period. Ninth, the composition of the TR Dizin Emergency Medicine category was not systematically verified for stability across the study period. Journals may have been added to or removed from this category between 2020 and 2025, which could introduce temporal heterogeneity into the corpus composition. Finally, theses and conference abstracts were outside the scope of this review, as neither TR Dizin nor WoS systematically indexes these document types.

Full-text analysis would extend methodological assessment beyond the title and abstract level, enabling evaluation of variables such as sample size, statistical complexity, and multicenter design. Whether the 2020–2025 distribution in TR Dizin reflects a durable structural pattern or a pandemic-period artifact also merits investigation.

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