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Turkish Journal of Emergency Medicine

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Original article

An investigation of the emergency medicine journals published in Turkey

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ARTICLE INFO

Article history:

Received 5 January 2015

Received in revised form

16 April 2015

Accepted 21 April 2015

Available online 9 March 2016

Keywords:

Emergency medicine

Epidemiologic studies

Journal article

ABSTRACT

Introduction: There are many academic journals in Turkey and the world. Medical journals have a significant place among those publications. The aim of this study is to examine qualitatively and categorize the scientific studies of the two journals in Turkey. It also aims to contribute the related literature in the area.

Material-Method: Academic journals of medical emergencies published in Turkey between January 1, 2003 and December 20, 2014 were investigated in detail. All the works in journals were categorized briefly as research articles, case presentations, review articles, and other works. Moreover, research articles were investigated as observational and experimental, and discussed according to the including topics.

Results: 943 scientific works in 86 issues were fully investigated. The total number was found to be 472 for research articles (50.1%), 242 for case presentations (25.7%), 108 for review articles (11.5%), and finally it was 12.8% for other works. Research articles included 450 observational (95.3%) and 22 experimental studies (4.7%). The key topics covered in research articles were the management and training of medical emergencies, trauma 96 (20.3%), toxicology 50 (10.6%), and gastrointestinal tract 36 (7.6%).

Conclusion: Despite its relatively short history, medical emergencies have improved progressively in Turkey. The number of domestic research articles has demonstrated an increase over the years. However, extra efforts are needed in order to improve the quality of articles. The most common contents encountered in research articles were the management and training of medical emergencies, trauma and toxicology.

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1. Introduction

There are many domestic and international studies which are conducted with scientific purposes. Medical journals have an important place in the literature.¹ The scientific researches in medical journals help to improve the quality of patients' medical care and the doctors' level of knowledge. Additionally, the scientific studies in the field of medical emergency promote researchers'

cooperation and help to decide the priorities of researches which will be conducted in the future.²

Two scientific journals of medicine are published in Turkey as Turkish Journal of Emergency Medicine and Journal of Academic Emergency Medicine. Even though the branch of emergency medicine has a short history, it demonstrates a rapid improvement. By means of this development, many scientific studies having a wide range of contents have been published. However, there has been no sufficient data related to quality of these studies.³ Additionally, it was stated that there was not adequate data about the quality of the international emergency medicine journals.⁴

Our aim is to categorize and examine qualitatively the scientific works of the two journals published in Turkey and contribute the related literature in the field.

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Peer review under responsibility of The Emergency Medicine Association of Turkey.

2. Material and methods

Study design and setting: All the works in the journals were classified primarily as research articles, case presentations, review articles and other works (letter to the editor, what I read today and visual diagnosis). Research articles were examined separately as observational and experimental. Furthermore, observational studies were categorized as descriptive and analytical (cohort, case-control, cross-sectional). On the other hand, experimental studies included randomized and non-randomized controlled trials. Our study is an observational (descriptive). In addition, the research articles in the journals were also categorized related to their content. Those topics involved the management and training of medical emergencies, trauma, toxicology, human gastrointestinal tract, neurology, etc. Under the heading of the management and training of medical emergencies, the studies included satisfaction surveys conducted on patients and their relatives, triage, disaster medicine, researches measuring emergency physicians' medical knowledge (e.g. EKG), the evaluation of emergency consultation, etc.

Sample size estimation: Because all the journals in the field were investigated, no tests measuring the sample size were administered.

Selection of participants: Turkish Journal of Emergency Medicine and Journal of Academic Emergency Medicine in Turkey were investigated retrospectively from December 20, 2014 to January 1, 2003. The archives of two journals were accessed from their official websites (Turkish Journal of Emergency Medicine: <http://www.trjemergmed.com> and Journal of Academic Emergency Medicine: <http://www.akademikaciltip.com>). Full papers of all studies in journals were obtained.

Interventions: Because of the observational-descriptive nature of the study, there was not subjectivity or any interventions from the researchers.

Methods and measurements: The researchers classified articles separately according to their scientific methods and contents by examining each one of them twice. The data gathered were compared by a third researcher who was neutral. And in case of inconsistency between the first two researchers, opinion of the third researcher was sought.

Outcomes: Scientific works in academic journals of medical emergencies were investigated methodologically and research articles were examined according to their contents.

Power of the study: The power analysis was not conducted as the study was observational-descriptive.

Analysis The statistical analysis of the data was performed by using IBM Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) Version 22.0 with %95 reliability. Pearson's Correlation Coefficient was used in order to measure the gradual changes of the number of studies over the years. $p < 0.05$ was considered as a statistically significant value.

Ethics committee: The approval of Ethical Review Board of Balikesir University Faculty of Medicine was obtained for this study.

3. Results

A total of 86 issues and 943 scholarly publishing in two medical journals between 2003 and 2014 were extensively investigated. The exact number of research article was found to be 472 (50.1%) whereas it was 242 (25.7%) for case studies, 108 (11.5%) for review articles, and 121 (12.8%) for others (Table 1). 450 (95.3%) of the research articles were observational while 22 (4.7%) of them were experimental. In the observational studies, the number of descriptive studies was 249 (55.3%) whereas it was 201 (44.7%) for analytical works. In the analytical studies, the number of cross-

Table 1

The average distribution of the studies published in journals of emergency medicine in Turkey.

| Year | Research article | | Review | | Case report | | Other | | Total | |
|--------------|------------------|-------------|------------|-------------|-------------|-------------|------------|-------------|------------|--------------|
| | n | % | n | % | n | % | n | % | n | % |
| 2003 | 20 | 50.0 | 16 | 40.0 | 4 | 10.0 | 0 | 0.0 | 40 | 4.2 |
| 2004 | 26 | 43.3 | 16 | 26.7 | 10 | 16.7 | 8 | 13.3 | 60 | 6.4 |
| 2005 | 26 | 50.0 | 8 | 15.4 | 9 | 17.3 | 9 | 17.3 | 52 | 5.5 |
| 2006 | 35 | 51.5 | 10 | 14.7 | 19 | 27.9 | 4 | 5.9 | 68 | 7.2 |
| 2007 | 35 | 46.7 | 9 | 12.0 | 25 | 33.3 | 6 | 8.0 | 75 | 8.0 |
| 2008 | 40 | 48.2 | 9 | 10.8 | 23 | 27.7 | 11 | 13.3 | 83 | 8.8 |
| 2009 | 43 | 50.0 | 8 | 9.3 | 23 | 26.7 | 12 | 14.0 | 86 | 9.1 |
| 2010 | 43 | 50.0 | 9 | 10.5 | 25 | 29.1 | 9 | 10.5 | 86 | 9.1 |
| 2011 | 44 | 48.9 | 9 | 10.0 | 23 | 25.6 | 14 | 15.6 | 90 | 9.5 |
| 2012 | 56 | 54.9 | 6 | 5.9 | 32 | 31.4 | 8 | 7.8 | 102 | 10.8 |
| 2013 | 51 | 46.4 | 5 | 4.5 | 29 | 26.4 | 25 | 22.7 | 110 | 11.7 |
| 2014 | 53 | 58.2 | 3 | 3.3 | 20 | 22.0 | 15 | 16.5 | 91 | 9.7 |
| Total | 472 | 50.1 | 108 | 11.5 | 242 | 25.7 | 121 | 12.8 | 943 | 100.0 |

sectional studies was 181 (90%). On the other hand, it was 18 (8.9%) for case-control and 2 (0.9%) for cohort studies. 15 (68.2%) of 22 experimental trials were randomized, but 7 (31.8%) of them were non-randomized. In our study, it was discovered that there was a negative and statistically significant decrease in the rates of reviews over the years. Whereas, no statistically significant increase or decrease was found in the proportion of the other studies over the years ($p < 0.05$) (Table 2). When the methods of research articles were analyzed, no statistical difference was observed over the years ($p > 0.05$) (Table 3).

The number of contents provided within research articles was found to be 118 (25%) for the management and training of medical emergency, 96 (20.3%) for trauma, 50 (10.6%) for toxicology and 36 (7.6%) for gastrointestinal tract (Fig. 1). Moreover, statistically significant correlation was demonstrated among toxicology, the management and training of medical emergency, other studying topics, and the change of the number of contents over the years ($p < 0.05$).

Table 2

Correlation between the studies published in journals of emergency medicine in Turkey and the years.

| | Year | |
|------------------|---------------|--------------|
| | r | p |
| Research article | 0.490 | 0.106 |
| Review | -0.854 | 0.001 |
| Case report | 0.544 | 0.068 |
| Other | 0.536 | 0.073 |

Table 3

The results of the correlation analysis of the relationship between the number of research articles and the years.

| Methods used for research articles | | | Years | |
|------------------------------------|---------------|---------------------------------|--------|-------|
| | | | r | p |
| Research Article | Observational | Descriptive | -0.269 | 0.398 |
| | | Analytical | 0.283 | 0.372 |
| Experimental | | Cross-sectional | -0.097 | 0.764 |
| | | Case-control | 0.393 | 0.206 |
| | | Cohort | 0.010 | 0.975 |
| | | Randomized controlled trial | | |
| | | Non-randomized controlled trial | -0.013 | 0.968 |

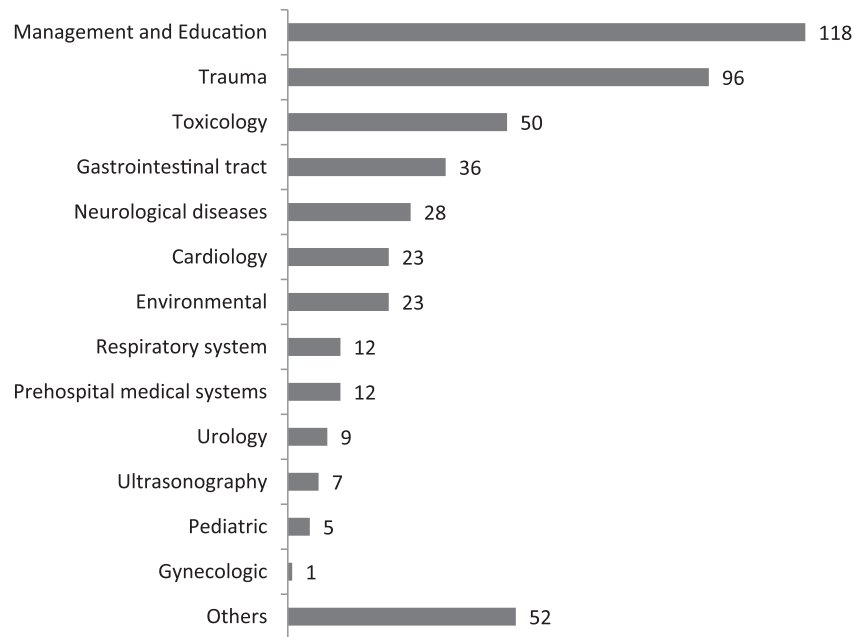


Fig. 1. The distribution of the contents studied between 2003 and 2014.

4. Discussion

Medical emergency, which has existed in our country for approximately 21 years, has showed a rapid increase similar to the developments in the world. In recent years, with the help of the new universities and Ministry of Health Educational and Research hospitals, the communities of medical emergency have gradually improved.⁵ In parallel with this improvement, the number of studies conducted on medical emergencies has substantially increased.³ Despite the existence of the researches which examine the international studies in the field of medical emergency,⁶ no domestic studies have been encountered. In a study conducted by Yanturalı et al, 10 years of international publishing of Turkish medical emergency were assessed. In this study, publications between 1994 and 2003 were examined. A total of 84 works were published between those dates. Research articles took the first place (63.1%) and case presentations occupied the second position (26.2%). In the research articles, the first place belonged to trauma (34.5%), second place was toxicology (21.4%), and cardiovascular diseases (9.5%) held the third place.³ In another study done by Çınar et al, the contribution of Turkish medical emergency to the 15 years of international literature was investigated. According to the results, there found to be a total of 514 studies. 61% of these studies were genuine research articles, and 35% were case presentations. In addition, 7.7% of the trials were on animals. The rate of contents: toxicology (26%), trauma (16%), and cardiology (7%).⁶ In a study conducted by Bounes et al in 2009 related to journals of medical emergencies which were on top 12 in the impact factor (IF) list, the qualities of those journals were examined. 330 clinical research articles were investigated in this study. 8.8% of the studies were randomized. 23.6% of them were cohort, 65.5% were cross-sectional, and 2.1% were case control. Within the same research, 57.3% of 330 studies were seen to be designed prospectively. The percentage of contents encountered was 17.6% for trauma, 12.7% for the management of huge crowd and the policies of emergency, 12.4% for cardiology, 8.8% for cardiac arrest, and 7.3% for training.⁴

Throughout our study, research articles constituted 50.1% of all studies, and it was followed by case presentations (25.7%). There

was an increase in the number of the studies published over the years, and this improvement had more effect on research articles. The rate of research articles were relatively low compared to the studies mentioned above. However, when the scanning of international publishing of the studies mentioned was considered, we held a belief that the rate of research articles in journals published within the country was moderate. The rate of case presentations was similar to both of the studies.

As for the methods of the studies investigated, it was seen that observational studies occupied an important place. On the other hand, experimental studies had a relatively low rate. In addition, it was found that the number of descriptive and analytic studies was similar to the observational studies. However, cross-sectional studies constituted most of the analytic studies, while the case control and cohort studies had a low rate. It was discovered that the number of descriptive and cross sectional studies had increased over the years. It was needed to be considered that the rate of randomized, case control, and experimental studies, which are more significant in terms of the scientific evidence level, was low. With regard to the quality of publications, it was also required to be taken into consideration that the researchers mostly used file scanning, questionnaires, etc. However, cross-sectional studies took the first place in the study conducted by Bounes et al with 12 journals having top IF value. In this case, there might be some obligatory reasons which prevent using scientific research methods in emergency services. Thus, because of the complex nature of the medical emergencies which leads a mass circulation of patient, an increase in the number of the patients, and the difficulty in getting consent, the physicians may encounter many problems while conducting the research.⁴ In addition, according to the “Index of Academic Publications in Turkey between 1981 and 2007” by TÜBİTAK-ULAKBİM in 2009, Turkey held the 16th position regarding the number of publications in the area of emergency medicine. Beside, in terms of IF, it took the 42nd place among 45 countries.⁷ It was considered that the problem demonstrated within this study was not only related to emergency medicine but all the branches of science as well. Additionally, the problem was a multi-dimensional and might be caused by many

complex factors including lack of adequate funds allocated for scientific works.⁶

When the contents of research articles were examined, it was discovered that the management and training of medical emergency occupied the first position (25%), and it was followed by trauma and toxicology. Moreover, the number of researchers on the management and training of medical emergency has increased significantly over the years. Although trauma might be considered as the most commonly examined topic in the study conducted by Bounes et al, if the contents including the management and controlling of huge crowd, the policies of emergency and training were considered, it would be possible to claim that those topics would occupy the first places. Conducting this study by examining the journals having the top 12 IF value makes this situation more important.⁴ As it can be understood from both of the studies that the management and training of the medical emergency is a central topic which has won a great popularity and taken the top places in terms of publications in recent years or will be expected to occupy them in the following years. So, the results of the study conducted by Bounes et al strongly support our findings. Trauma and toxicology are the most commonly researched topics, which is in parallel with the studies mentioned above. The first place for the patients suffering from trauma and toxicology to get diagnosis and treatment is the medical emergencies of the hospitals. Thus, as a natural outcome of this situation, it should be considered as normal for physicians to be tend to carry out academic researches on those topics. In addition, according to the study conducted by Nawar et al, trauma constituted 24.1% of the admissions of medical emergency, while it was 0.8% for toxicology.⁸ So, the number of the toxicology patients was low, whereas the number of studies was surprisingly high. This demonstrates that physicians are both sensitive about and interested in toxicology. .

In the field of gynecology, only one study was encountered. The reason for the low number of the studies in gynecology and pediatrics is that the pediatric emergencies, gynecological diseases, and obstetrical emergencies are organized into the different units and hospitals, which is different from adults.

Limitations: As medical emergency covers a wide range of disciplines, researchers might send their studies to different journals apart from the journals of medical emergency. In our study, Turkish Journal of Emergency Medicine and Journal of Academic Emergency Medicine were investigated exclusively. This situation can be considered as a limitation of the study. It will be useful for researchers to assess the quality of the data obtained in terms of this information.

Conclusion

Although the history of medical emergency in Turkey is relatively short, it has a developing continuum. The number of domestic studies has demonstrated an increase over the years. However, for improving the quality of publications, extra efforts are needed. The most common topics included in research articles were the management and training of medical emergency, trauma and toxicology.

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