



Bibliographic Analysis of Postgraduate Thesis Studies on Crimean-Congo Hemorrhagic Fever in Turkey

Işıl Deniz Aliravci

Infectious Diseases Department, Çanakkale 18 Mart University Hospital, Çanakkale, Türkiye

Email address:

isildeniz.aliravci@comu.edu

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Abstract: *Objectives:* The purpose of this study was to provide perspective for those who will study Crimean-Congo hemorrhagic fever (CCHF) by a bibliographic analysis of postgraduate theses on disease. *Materials and methods:* The study group of the research consisted of 80 postgraduate theses written in Türkiye and indexed in the Council of Higher Education National Thesis Center database between January 1, 2000 and April 20, 2022, with the keywords 'Crimean-Congo hemorrhagic fever' and 'CCHF'. Content analysis and descriptive analysis (frequency analysis) methods were used together in the study. SPSS was used to analyze the study's data and create graphics. The general characteristics of the categorical groups were summarized as numbers and percentages. The theses are examined under six sub-headings: year, institution, departments, thesis level samples, research subjects, and written language. *Results:* Looking at the distribution by years; the largest number of theses was published between 2014 and 2017 years. Theses of 77 (96%) were written at university and three (4%) at Ankara Training and Research Hospital. Sivas Cumhuriyet University was the institution that produced the most theses (30%). The highest number of theses were at the level of specialization in medicine (45%). In the content analysis, clinical research studies (76%) were the most and only two of them were about the treatment and vaccine. The dominant writing language was Turkish (95%). *Conclusion:* According to the content of the theses, the number of studies on the pathogenesis and clinic of the disease draws attention, while only a few theses were written about the treatment and vaccine. The theses on CCHF, which is a health problem, especially for the people of Central Anatolia, need to be increased both in content and numerically.

Keywords: Bibliographic Analysis, Crimean-Congo Hemorrhagic Fever, Postgraduate Thesis

1. Introduction

Crimean-Congo hemorrhagic fever (CCHF) virus is the causative agent of the CCHF disease that can result in death and this viral infection is most commonly seen in Asia, Africa, Eastern Europe, and the Middle East. The first cases in our country were reported in 2002. The disease in our country is especially seen in Northeastern Anatolia (Tokat, Sivas, Gümüşhane, Amasya, Yozgat, and Çorum), but in recent years case reports from western provinces have also been reported. [1, 2]

Bibliometrics has become a popular research method tool in recent years by analyzing publications in a particular area on a particular subject and comparing research performance between different countries, universities, and institutions. It is an interdisciplinary research field that can be used in almost all scientific fields. It is performed to determine the

numerical analysis of the development and characteristics of certain fields of science and scientific research in relation to statistical methods and evaluates research points, researcher level, and their strength of influence (eg number of citations). Bibliometric analysis is a scientific mapping to visualize a particular field or subject in a certain systematic by analyzing the relationship between authors or publications and giving quantitative information. It shows the previous and the last approaches of the research and gives new ideas to researchers by saving time in terms of literature review. [3, 4]

The main objective of this study is to examine and conduct a bibliographic examination of the postgraduate thesis studies on Crimean-Congo hemorrhagic fever and gain perspective of those who will work on this subject.

2. Materials and Methods

The study group of the research is consisted of 80

postgraduate thesis studies made in Türkiye and indexed in the Council of Higher Education National Thesis Center database between January 1, 2000 and April 20, 2022 with the keywords 'Crimean Congo Hemorrhagic Fever' and 'CCHF'. The data of 80 thesis with contents consisting of "Crimean-Congo hemorrhagic fever" and "CCHF" were first uploaded to the excel programme for the study of bibliographically analysis. Statistical Packages for the Social Sciences (SPSS) software for Windows, version 25 (IBM Corp.; Armonk, NY, USA) was used in the analysis of the data obtained in the study and in the creation of graphics. The general characteristics of the categorical groups were summarized as numbers and percentages.

3. Results

Theses of 80 were included in the study. The contents of the parameters evaluated in the analysis are presented below as items.

3.1. Publication Year of Theses

According to the distribution by year, the largest number of theses was written between 2014 and 2017, as indicated in Table 1.

3.2. Level of Theses

The highest number was at specialization thesis in medicine (n: 36, 45%) (Figure 4).

3.3. Institution Where Theses Were Published

Seventy-seven (96%) of them were written in universities and three (4%) of them were written in Training and Research Hospital. The distribution of thesis advisors was; 22 (28%) of them Assoc. Dr., 45 (56%) of them Prof. Dr. and 13 (%16) Assist. Associate Professor/Assist. Prof. Dr.

3.4. The Branch of Science Departments in Which Theses Are Made

The highest number of theses were made in the department of infectious diseases and clinical microbiology (n: 24 %30). There were thesis in different 18 branches from biochemistry to clothing industry department, as indicated in Figure 1.

3.5. Distribution of Thesis Studies

The theses were categorized into four types according to the type of study. They consisted of 11 animal studies, two modeling studies, six survey studies, and 61 clinical trial studies. The highest number of the theses were clinical research studies (76%), as shown in Figure 2.

One of the clinical trial focused on the analysis of the cost of treatment in patients, while 10 were based on the retrospective evaluation of patients.

There is one mathematical modeling study that predicts the change in the number of ticks, and one Geographical Information System analysis on a regional case distribution map. Of the animal studies, 10 of them were theses about the investigating CCHF virus carriers in cattle, sheep, and/or ticks in Tokat, Amasya, Çorum, Kütahya, Samsun, Sivas, Elazığ provinces, and Thrace region.

Four of the six survey studies were made by public health department, one was nursing department and the other thesis study was conducted by the Clothing Industry Departments.

There were only two clinical theses that investigated the effect of oral ribavirin treatment, which is the only antiviral agent used limited in the treatment of the CCHF disease, and only two of studied about the vaccine, which has an important role in preventive treatment.

3.6. Distribution of the Theses Levels by Language

The dominant language was Turkish in the theses (95%), as shown in Table 3. All studies in the English language were master's degree studies, as shown in Figure 3.

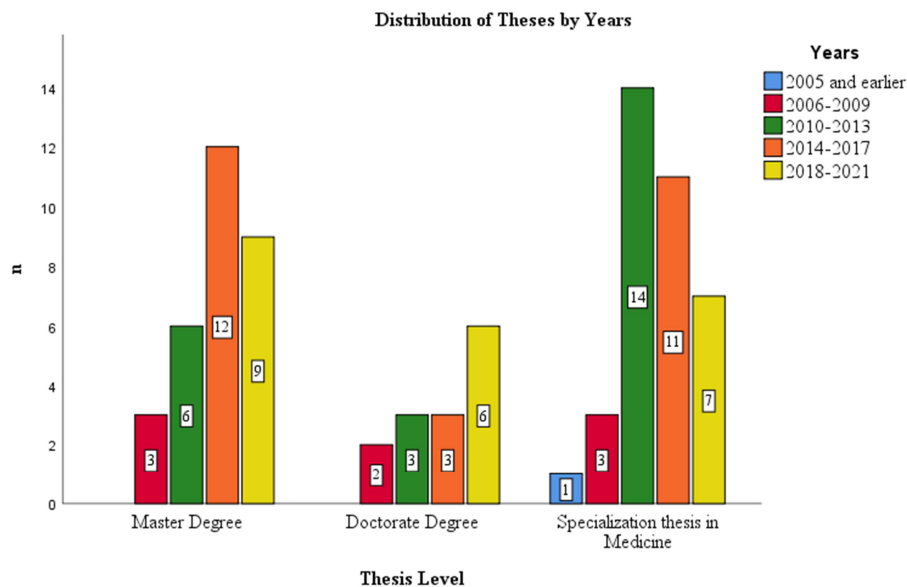


Figure 1. Level of examined theses and distribution by years.

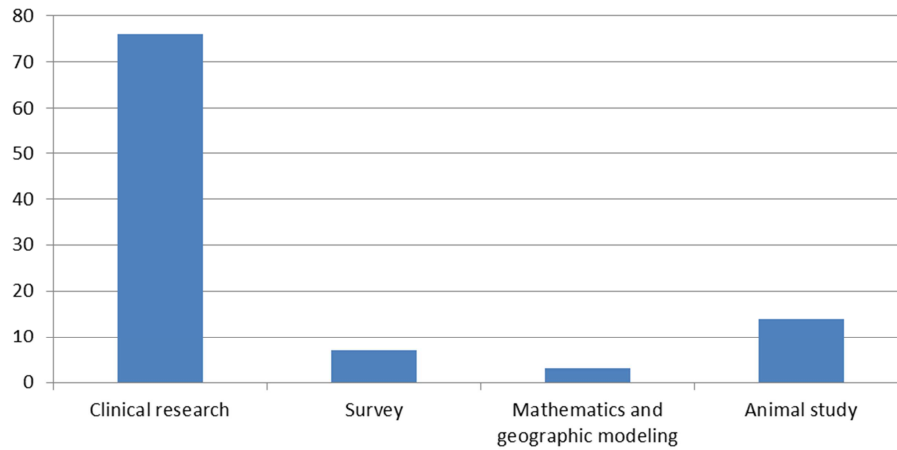


Figure 2. Level of examined theses and distribution by years.

Table 1. Distribution of theses by years.

Year groups	2005 and Earlier		2006-2009		2010-2013		2014-2017		2018-2021		Total
Thesis level	n	%	n	%	n	%	n	%	n	%	
Master's degree	-	-	3	10.00	6	20.00	12	40.00	9	30.00	30
Doctorate degree	-	-	2	14.30	3	21.40	3	21.40	6	42.90	14
Specialization thesis in medicine	1	2.80	3	8.30	14	38.90	11	30.60	7	19.40	36
Total	1	1.25	8	10.00	23	28.75	26	32.50	22	27.50	80

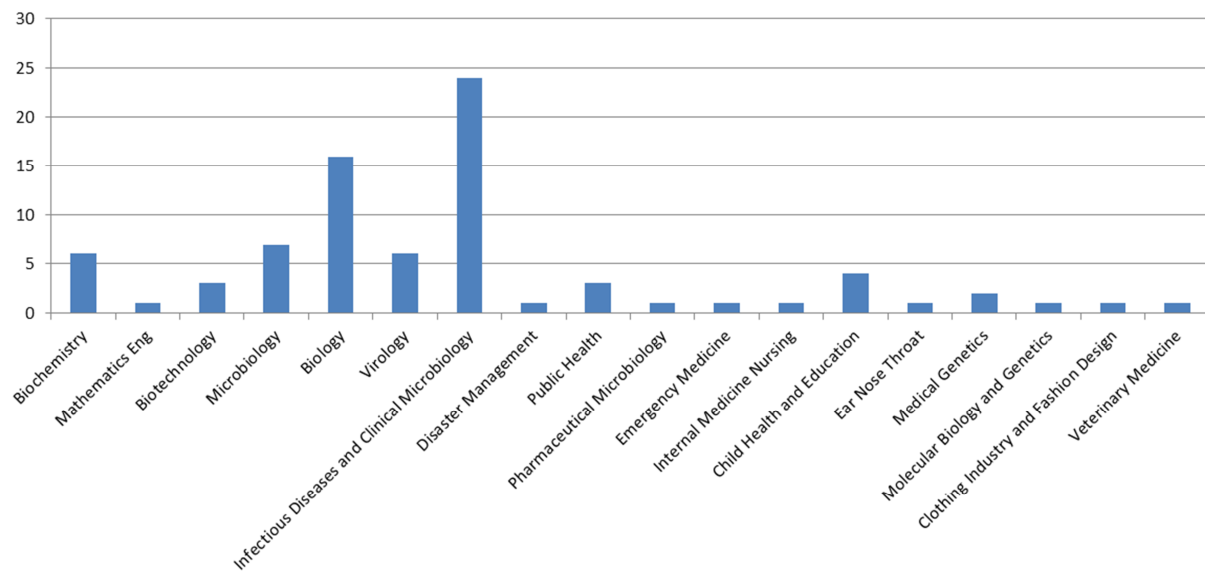


Figure 3. The branch of science departments.

Table 2. Distribution of thesis levels by universities.

	Master Degree	Doctorate	Specializationin Medicine	Total
Ankara Atatürk Training and Research Hospital	0	0	1	1
Ankara Dışkapı Yıldırım Beyazıt Training and Research Hospital	0	0	1	1
Ankara Numune Training and Research Hospital	0	0	1	1
Ankara	2	4	0	6
Atatürk University	1	0	9	10
Bezm-i Alem Vakıf University	2	0	0	2
Cumhuriyet University	7	3	14	24
Dumlupınar University	1	0	0	1
Erciyes University	4	0	0	4
Fatih University	2	0	0	2
Fırat University	0	3	0	3
Gazi University	1	1	0	2
Gaziosmanpaşa University	6	0	4	10

	Master Degree	Doctorate	Specializationin Medicine	Total
Gümüşhane University	1	0	0	1
Harran University	0	0	2	2
İstanbul Teknik University	1	0	0	1
İstanbul University	0	1	0	1
Karadeniz Teknik University	0	0	1	1
Koç University	1	0	0	1
Ondokuz Mayıs University	1	1	3	5
Tekirdağ Namık Kemal University	0	1	0	1
Total	30	14	36	80

Table 3. Distribution of thesis levels by language.

	Turkish		English		Total
	n	%	n	%	
Master's degree	26	86.70	4	13.30	30
Doctorate degree	14	100.00	-	-	14
Specialization in medicine	36	100.00	-	-	36
Total	76	95	4	5	80

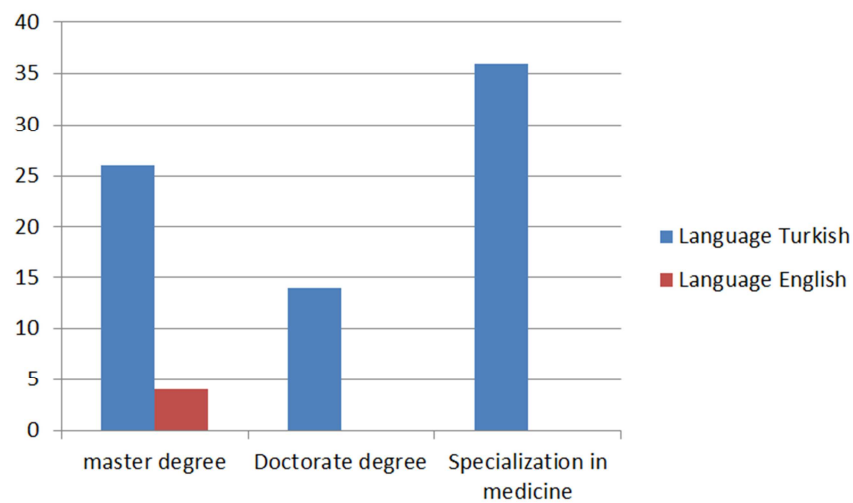


Figure 4. Distribution of thesis levels by language.

4. Discussion

Bibliographic analyzes, which are frequently used in non-medical sciences, have also been used in the examination of the literature in the field of medicine in recent years. No similar bibliographic thesis study was found on the subject of 'CCHF' in our country. At the same time, it was noted that there are limited number of bibliometric analysis studies in the field of medicine. Bibliometric analyzes contribute to the literature in terms of giving an overview of the articles or thesis studies on the subject. [3-9]

Crimean-Congo hemorrhagic fever infection was first detected in our country in a group of patients who presented with fever and petechial rash in the province of Tokat in 2002. After that, the number of cases reported in our country increased rapidly in the following years especially in 2008 and 2009 before gradually decreasing. [10] According to the report of the Turkish Ministry of Health, Tokat, Yozgat, Sivas, Erzurum, Çorum, Erzincan, and Artvin were the most prevalent provinces during 2002 and 2003 years, but the cases spread across the country in 2017. [11]

Dereli and Kayser [5] searched delivered 1,480 articles on Scopus since 1969 for their study of bibliometric assessment of the literature about CCHF and found 26% of the articles are based in Türkiye, 17% from the United States, and 8% from Iran. Türkiye is in first place in the top 10 countries with their major institutes and authors concerning scientific publication on CCHF research (as of November 16, 2016) from Scopus. According to a Scopus search, Sivas Cumhuriyet University in Türkiye with 54 articles (3.6% of the 1,480 published research papers) provided the second most abundant source of CCHF worldwide after the Pasteur Institute of Iran. The next most abundant source was Ankara Numune Training and Research Hospital, which contributed 49 articles (3.3%). Karadeniz Technical University and Bozok University followed in third and fourth place after Cumhuriyet University and Ankara Numune Training and Research Hospital, respectively. In Alkan's study, the provinces of Ankara, Erzurum, Istanbul, and Sivas were found to be the most frequently examined. [6] There were studies conducted in Sivas and Erzurum which are two metropolitan endemic cities for CCHF. [12-14]

In parallel with its contribution to the literature, the Sivas

Cumhuriyet University was the institution that published the most theses (n=) in our study but on contrary to the literature, only one thesis was conducted by Ankara Numune Training and Research Hospital.

It has been found 1,776 articles on the topic of CCHF in PubMed since 1957 and 11 were in the Turkish language. [15] Only one was about the treatment and efficacy of ribavirin. [16] Consistent with the literature, only two of the theses were about the efficacy of ribavirin. The first Turkish article was published in 2004 in PubMed. [10] In our study; it is seen that the first postgraduate thesis was written in 2005, no study in 2006, and only one thesis was written in 2007. Theses about CCHF have been carried out since 2008 and the number of theses in this field was the highest in 2016 (n=9) and 2019 (n=9). In our study, the number of theses in English was only five and all were at the master's level.

While most of the publications indexed in PubMed were published in 2021 (n=156), [15] most of the theses were written between 2014 and 2017, and only four theses were written in 2021.

Alkan Çeviker et al. [6] found that most of the studies about CCHF investigated demographic characteristics, followed by epidemiologic assessment (36.6%), and clinical features (31.7%). In our study theses mostly consisted of human clinical studies (n=61). Each one of the theses was a mathematical and geographical modeling study, 11 consisted of animal studies, and six consisted of knowledge/behavior/attitude and survey studies.

As a result, it was determined that the majority of the theses in the field of CCHF were carried out at the master's level. In the content analysis, however, there was the largest number of human clinical studies. However, it was observed that there was only one study related to the treatment and two vaccine studies. Making such comparisons can provide perspective to researchers who will work in this field.

Nonetheless, the current study has a limitation. A single database was used in the study. Therefore, it may not reflect all the scientific literature on CCHF.

In conclusion, it is necessary to support new theses on CCHF, especially in the English language, and to increase the number of theses published especially about the treatment and vaccine in our country.

5. Conclusion

According to the content of the theses, the number of studies on the pathogenesis and clinic of the disease draws attention, while only a few theses were written about the treatment and vaccine. The theses on CCHF, which is a health problem, especially for the people of Central Anatolia, need to be increased both in content and numerically.

Ethics Committee Approval

Ethics committee approval was not obtained because there was no animal or human study and it was a document review study. The study was conducted in accordance with the

principles of the Declaration of Helsinki.

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest

The authors declared no conflicts of interest with respect to the authorship and/ or publication of this article.

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