

Tetanus: A bibliographic analysis of theses from Turkey

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ABSTRACT

Objectives: The aim of this study was to conduct a bibliographic analysis of the theses on tetanus published in our country.

Materials and methods: The bibliometric analysis was carried out on tetanus-related graduate theses written in Turkey between 1971 and 2020. The theses were examined in terms of date, type, subject, institution, sample size, and index.

Results: The study included 41 theses. The sample size ranged from 13 to 1,292. Ege University, Dokuz Eylül University, Gazi University, and Mustafa Kemal University were the institutions with the most theses written from 28 different institutions. Thirty (73.1%) of the theses were medical specialty theses. They were mostly written by the branches of Infectious Diseases and Clinical Microbiology (31.7%) and Microbiology (21.9%).

Conclusion: In the content analysis of the theses, it was determined that there were studies on antibody level/immunity/vaccine and seroprevalence, but there were few studies on disease treatment. This study is limited to the theses written in our country. By expanding the scope of the study, more detailed information can be obtained.

Keywords: Bibliographic analysis, tetanus, thesis, Turkey.

Tetanus is an infectious disease caused by the anaerobic bacillus *Clostridium tetani* (*C. tetani*) which can be fatal due to convulsions.^[1] Although tetanus is now rare in developed countries due to vaccination, it remains a public health problem, mainly in developing countries, due to insufficient vaccination. Because *C. tetani* spores cannot be eliminated from the environment, this disease will continue to stay on the agenda.^[1,2]

The most important function of universities with postgraduate education is to train future academicians, and evaluating theses written in many branches of the academy from an integrated perspective gives science a different point of view.

For this purpose, bibliometric techniques can be used.^[3-5]

There has been a significant increase in scientific content in Turkey and around the world in recent years, and it is necessary to evaluate scientific content while planning studies. The purpose of this study was to provide a perspective on the determination of deficiencies in the field, with a bibliographic analysis of postgraduate theses on “tetanus” to researchers who plan to study on this subject.

MATERIALS AND METHODS

The study group consisted of 41 postgraduate theses with the keyword “tetanus” written in Turkey between 1971 and 2020 and indexed in the database of The Council of Higher Education (CoHE) National Theses Center. In this study, document analysis (bibliometric research), one of the qualitative research methods, was used.^[6] Bibliometric research contributes to the development of future science policies by assessing the proficiency, number, and quality of scientific

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Table 1. Evaluation of doctoral dissertations

Institution	Sample size	Sampling	Method	Evaluation	Branch	Control group
Gazi University	90	Pregnant	Prospective	Antibody level	Institute of Health Sciences	Yes
Gazi University	431	Women	Prospective	Seroprevalence	Department of Public Health	No

branches in their corresponding fields. In this study, the theses were examined in terms of date, type, place, subject, institution, sample size, and index. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Theses, which can be accessed in the National Theses Center Database of the Council of Higher Education (CoHE), were transferred to the thesis review form created by the researchers and analyzed. While creating the thesis review form, the forms used in similar studies were examined, and a proposal form was created.^[7-11]

The year the theses were published, the institution, research method, data analysis techniques, study group, and research topic were all examined in this research. The study was conducted in accordance with ethical principles.

RESULTS

Data analysis

In the study, descriptive analysis was performed while content analysis was carried out. The

frequency analysis of the sampling, data collection techniques, and data analysis methods was used to evaluate the research.

A. Descriptive analysis: A total of 41 theses were analyzed. The following are the contents of the parameters that were assessed in the analysis.

- 1. The year of theses:* Looking at the distribution by year, it was found that most theses were written between 2001 and 2010 (Table 1).
- 2. Level of theses:* The highest number was found at the level of specialization in medicine (n=30, 73.1%), and the second was at the level of master's degree (n=8, 19.5%) (Figure 1).

B. Sampling and thematic analysis: The sample size ranged between 13 and 1292. The institutions with the most theses written from 28 different institutions were Ege University, Dokuz Eylül University, Gazi University, and Mustafa Kemal University, each with two theses. Thirty (73.1%) of these were Medical Specialty

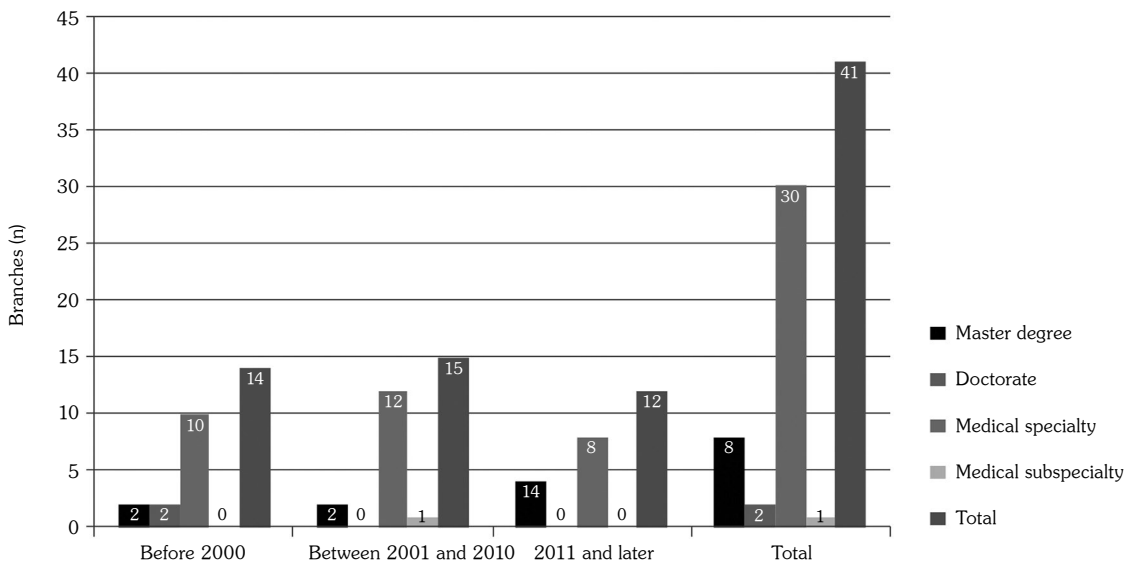


Figure 1. Distribution of graduate theses according to years and education level.

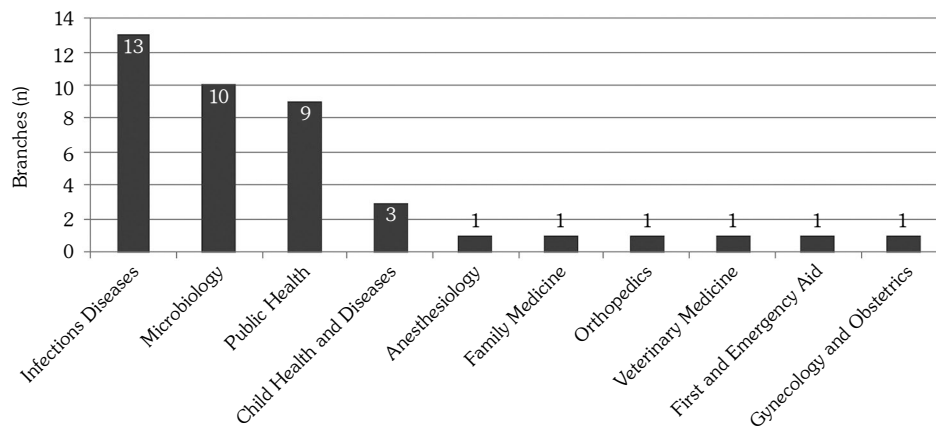


Figure 2. Distribution of theses according to branches.

theses. Thirteen (31.7%) of the theses were written in Infectious Diseases and Clinical Microbiology, 10 (24.3%) in Microbiology, nine (21.9%) in Public Health, three (7.3%) in Child Health and Diseases, and one in Anesthesiology, Family Medicine, Orthopedics, Veterinary Medicine, First and Emergency Aid, Obstetrics

and Gynecology (Figure 2). There was a study on a rat and a colt. Others were on human. Six were in pregnant women, and two were in newborns. There were 12 vaccines, 10 antibody levels, three tetanus treatments, immunity and seroprevalence studies.

Table 2. Evaluation of master's theses

Institution	Sample size	Sampling	Method	Evaluation	Branch	Control group
Hacettepe University	316	Soldier	Prospective	Antibody level + Seroprevalence	Public Health	No
Istanbul University	Unspecified	People aged 65 and older	Prospective	Antibody level	Microbiology	Yes
Hacettepe University	365	Volunteer	Prospective	Antibody level	Public Health	No
Adnan Menderes University	356	Volunteer	Prospective	Determination of immune status	Microbiology	No
Mustafa Kemal University	358	Adult patients with type-2 diabetes mellitus	Prospective	Determination of immune status	Infectious Diseases and Clinical Microbiology	Yes
Duzce University	356	Adults	Prospective	Antibody level	Microbiology	No
Ege University	146	Pregnant	Single-blind randomized controlled trial	The investigation of the effect of "ShotBlocker" used during vaccination on pain and patient satisfaction	Nursing	Yes
Adnan Menderes University	13	Colt	Prospective	Vaccination-Biochemical effect	Veterinary Medicine	Yes

Table 3. The bibliometric analysis of specialization theses in medicine

Characteristics	n	%	Median	Min-Max
Institution (University)	29	93.5		
Number of branches	9			
Sample size			311	29-1,292
Sampling				
Experimental animal	1	3.2		
Pregnants	4	12.9		
Babies and children	3	9.6		
Women	4	12.9		
High-risk occupational groups	1	3.2		
Special patient groups (diabetes, hemodialysis patients, multiple sclerosis, bone marrow transplants)	4	12.9		
Serum samples	1	3.2		
Patients with tetanus	3	9.6		
Type of study				
Survey	1	3.2		
Experimental animal	1	3.2		
Descriptive	1	3.2		
Unspecified	3	9.6		
Prospective	18	58.1		
Doubleblind	1	3.2		
Cross-sectional	3	9.6		
Retrospective	2	6.5		
Evaluated subjects				
Antibody/immunity/seroprevalence	22	71		
Clinical signs and treatment	4	12.9		
Evaluation of prophylaxis	2	6.5		
Vaccine side effects	1	3.2		
Improvement of laboratory test kits	1	3.2		
Unspecified	1	3.2		

When the doctoral theses were analyzed, it was found that they were all prospective, with sample sizes ranging from 90 to 431 (Table 1). Looking at the master's theses, it was found out that the majority of them (87.5%) were prospective, and the sample group consisted of people except for one study. The sample size ranged from 13 to 365, and they were performed in a variety of fields ranging from veterinary to nursing (Table 2).

Most theses (n=31) were written in the field of specialization in medicine, and a detailed analysis was performed in this field (Table 3).

DISCUSSION

According to World Health Organization (WHO) data for 2019, there are 14,751 new cases of tetanus worldwide, and tetanus is still one of the diseases that remains important. Therefore, studies are needed to prevent and

manage this disease. Vaccination policies have reduced neonatal tetanus cases worldwide over the years. However, sporadic cases of tetanus continue to occur in adults whose antibody levels have declined over time, who have previously been vaccinated but have not received booster doses, or who have never been vaccinated.^[12,13]

Tetanus immunization is also considered important by the Ministry of Health of the Republic of Turkey, and there is an "Expanded Program on Immunization" circular on the subject.^[14] Adult tetanus cases, however, are still being reported in our country.^[15-19]

Apart from the theses conducted in our country, other tetanus studies were examined, and it was found that seroprevalence and immunity studies were found in the local literature.^[20-23] There are also studies that evaluate knowledge-opinion-attitude about tetanus vaccination.^[24]

The majority of the theses examined in our study were antibody level/immunity/seroprevalence/vaccine studies, with a small number of theses on treatment.

There was no bibliographical review of this topic in either local or foreign literature. In the literature review, there were only a few foreign reviews and meta-analyses.^[25-30]

The limitations of the study were the scope and source of the researched theses. The data were obtained by evaluating only theses written in our country, rather than the international literature.

In conclusion, according to the content analysis of tetanus theses, there were antibody level/immunity/vaccine and seroprevalence studies, but there were few studies on disease treatment. By expanding the scope of the research, more detailed information can be obtained. In this way, a comparative study can provide researchers working in this field with a new perspective on developments.

Declaration of conflicting interests

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