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Pediatric burns research: A history or an evolution?



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ABSTRACT

Background/purpose: Pediatric burns research has increasingly been recognized as a sub-specialty of its own. The aim of this study was to assess and analyze the publication patterns of the pediatric burns literature over the last six decades.

Methods: A search strategy for the Web of Science database was designed for pediatric burns publications, with output analyzed between two periods: 1945–1999 (period 1) and 2000–2013 (period 2).

Results: There were 1133 and 1194 publications for periods 1 (1945–1999) and 2 (2000–2013), respectively. The mean citation counts of the top 50 publications were 77 (range 45–278) and 49 (range 33–145) for periods 1 and 2, respectively. There were 26 and 20 authors with two or more publications in the top 50 list in periods 1 and 2, respectively. Of these there are two authors that have published 47 papers in both combined time-periods. There were 29 and 9 journals that have published 50% of the publications for time-period 1 and 2 respectively. In period 2, there were two burns journals that have published 37.2% of the total articles.

Conclusions: Pediatric burns research has evolved from an associated, dispersed entity into a consolidated sub-specialty that has been successfully integrated into mainstream burns journals.

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1. Introduction

The management of burns has evolved from its beginnings shortly after the discovery of fire to modern day medicine. The first publication on burns in a contemporary medical journal was in 1814 in a manuscript which tackled the issue of contractions after burns [1]. Pediatric burns research has recently come to the fore as a specialty separate to adult

burns research. The medical literature has progressively expanded in more recent years. The internet, on-line submissions and on-line publishing has facilitated this expansion.

Bibliometrics is a method that can be utilized to evaluate patterns and trends in the literature over time. It has been used to create “top cited articles” in several specialties [2–4]. It has also been used in more novel ways to assess research output and funding [5,6], to identify research gaps within a

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Abbreviations: WoS, Web of Science; MeSH, Medical Subject Heading; JAMA, Journal of the American Medical Association.

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specialty [7,8], with some grant authorities using this technique to decide on where funding should be distributed.

The aim of this paper was to analyze the publication patterns of the pediatric burns research literature over time using bibliometric methodology and to highlight the evolution of this sub-specialty.

2. Materials and methods

Medical Subject Headings (MeSH) and non-MeSH terms were used to search the title field within the Web of Science (WoS) database for pediatric burns papers. [Appendix A](#) details this search strategy. Data were retrieved for two time-periods. Period 1 – 01/01/1945 to 31/12/1999 and period 2 – 01/01/2000 to 31/12/2013. These time-periods were chosen as they divide the number of publications into two groups of similar size. The searches were performed in September 2014. Search results from WoS included entries from the “Science citations index expanded”; “social sciences citation index” and “arts and humanities citation index” databases. The data downloaded from the WoS was assessed and analyzed using Microsoft Excel spreadsheet software. Results are expressed as mean with range in brackets throughout the manuscript.

3. Results

There were 2327 articles published on pediatric burns between 1945 and 2013. Almost 50% (1133) of these publications were published in the 54 years between 1945 and 1999 (period 1). The remaining 1194 articles were published in the 14 years between 2000 and 2013 (period 2, [Fig. 1](#)). The maximum number of publications in any year was 121 in 2010.

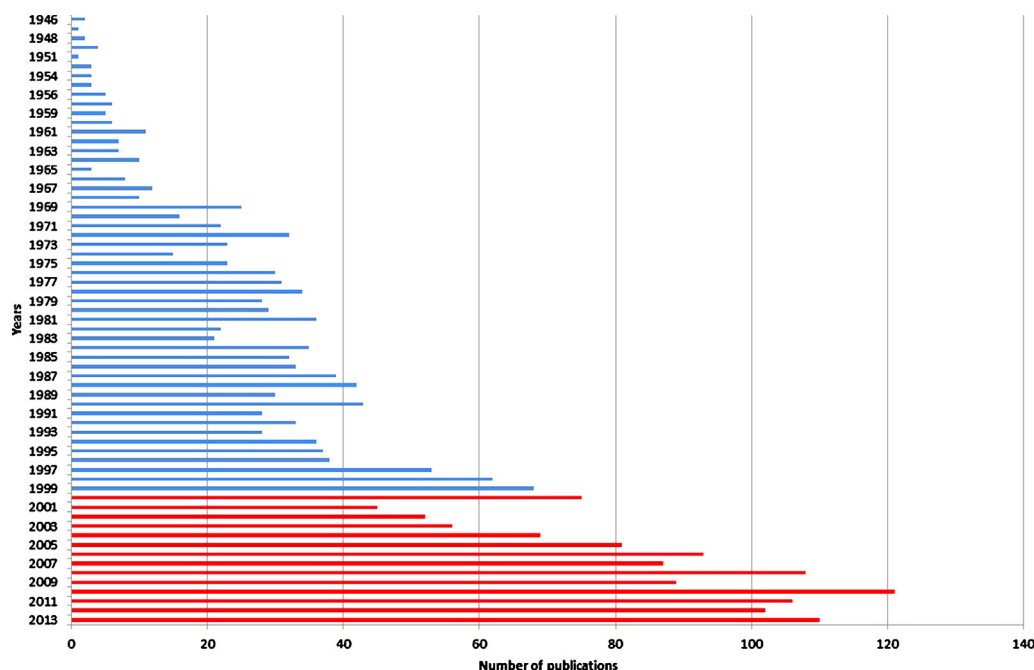


Fig. 1 – Publication trend from 1945 to 2013. This graph demonstrates the number of pediatric burns publications per year from 1945 to 2013. The blue bars represent period 1 (1945–1999) and the red bars represent period 2 (2000–2013). (For interpretation of the references to color in figure legend, the reader is referred to the web version of the article.)

3.1. Top cited articles

[Tables 1 and 2](#) list the 10 top cited articles in each time period. The mean number of citations was 77 (range 45–278) and 49 (range 33–145) for period 1 and period 2, respectively. The articles in the top 50 cited list were analyzed according to the WoS categories; “surgery”, “critical care medicine”, “pediatrics” and “dermatology” are ranked in the top 4 in both time-periods. The category of “dermatology” and “critical care medicine” increased in importance in period 2. In these top 50 cited lists, the majority of publications were clinically based (48 and 47 publications in period 1 and period 2, respectively). There were three publications in these top cited articles, where an inter-institutional collaboration was formed. These three articles were published in 1962, 1970 and 2000.

3.2. Top cited authors

The first two and senior two authors were considered the most important in this study. [Table 3](#) lists those authors who have more than three publications in the top 50 cited articles for each time-period. There were 26 and 20 authors with more than one publication in the top 50 cited publications in periods 1 and 2, respectively. Of the 12 authors appeared in the top 50 list in both time-periods: two authors in particular have amassed 47 publications. There were 103 and 90 authors with a single publication in periods 1 and 2, respectively.

3.3. Top cited journals

The total number of journals publishing these articles was 339 and 302 for periods 1 and 2, respectively. There were 29 and 9 journals that had published greater than 50% of all publications for periods 1 and 2, respectively. These journals have

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