

# Highest Impact Articles in Microsurgery: A Citation Analysis

Kuylhee Kim, MD<sup>1</sup> Ahmed M. S. Ibrahim, MD<sup>1</sup> Pieter G. L. Koolen, MD<sup>1</sup> Mark K. Markarian, MD, MSPH<sup>1</sup>  
Bernard T. Lee, MD, MBA<sup>1</sup> Samuel J. Lin, MD<sup>1</sup>

<sup>1</sup>Division of Plastic Surgery, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts

Address for correspondence Samuel J. Lin, MD, 110 Francis Street, Lowry Suite 5A, Boston, MA 02215 (e-mail: sjlin@bidmc.harvard.edu).

J Reconstr Microsurg 2015;31:527–540.

## Abstract

**Background** Microsurgery has developed significantly since the inception of the first surgical microscope. There have been few attempts to describe “classic” microsurgery articles. In this study citation analysis was done to identify the most highly cited clinical and basic science articles published in five peer-reviewed plastic surgery journals.

**Methods** Thomson/Reuters web of knowledge was used to identify the most highly cited microsurgery articles from five journals: *Plastic and Reconstructive Surgery*, *Annals of Plastic Surgery*, *Journal of Plastic, Reconstructive & Aesthetic Surgery*, *Journal of Reconstructive Microsurgery*, and *Microsurgery*. Articles were identified and sorted based on the number of citations and citations per year.

**Results** The 50 most cited clinical and basic science articles were identified. For clinical articles, number of total citations ranged from 120 to 691 (mean, 212.38) and citations per year ranged from 30.92 to 3.05 (mean, 9.33). The most common defect site was the head and neck ( $n = 15$ , 30%), and flaps were perforator and muscle/musculocutaneous flaps ( $n = 10$  each, 20%, respectively). For basic science articles, number of citations ranged from 71 to 332 (mean, 130.82) and citations per year ranged from 2.20 to 11.07 (mean, 5.27). There were 27 animal, 21 cadaveric, and 2 combined studies.

**Conclusions** The most highly cited microsurgery articles are a direct reflection of the educational and clinical trends. Awareness of the most frequently cited articles may serve as a basis for core knowledge in the education of plastic surgery trainees.

**Level of Evidence** III.

## Keywords

- ▶ microsurgery
- ▶ high impact
- ▶ citation classic
- ▶ citation analysis
- ▶ historical paper

Scientometrics is the art of measuring and analyzing the output of scientific literature.<sup>1</sup> In practice, it often entails bibliometrics, which is a quantitative measurement of the impact of an academic field, set of researchers, or a particular article. Citation analysis is one of the most widely employed methods of bibliometrics. It quantifies the number of times a particular article has been referenced by different authors.<sup>2</sup> Since citation analysis is an objective means of assessing the impact of a scientific publication over time, there have been numerous attempts to identify the most highly cited articles in various medical disciplines.<sup>3–8</sup> In 1987, Garfield introduced

the concept of the “citation classic,” a term which itself has been referenced over 400 times.<sup>9</sup> Identifying highly cited articles is important because it represents the greatest impact work in a given field making it essential for clinicians and scientists in a particular area of study to familiarize themselves with it.<sup>10</sup> In addition, analyzing trends among these articles can be indicative of the direction in which a field of study is headed and offers insight into the highly active areas of research within the discipline.<sup>10</sup>

To date, only two attempts to identify “citation classics” in plastic and reconstructive surgery have been attempted<sup>11,12</sup>

## received

September 15, 2014

## accepted after revision

January 11, 2015

## published online

March 13, 2015

Copyright © 2015 by Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001, USA.  
Tel: +1(212) 584-4662.

DOI <http://dx.doi.org/10.1055/s-0035-1546292>.  
ISSN 0743-684X.