

Publications from Saudi Arabia in Plastic Surgery in the Recent Five Years

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Background: In the last 5 years, many universities and medical centers have contributed immensely to medical research in Saudi Arabia. The aim of this study is to review the publications in the last 5 years in the field of plastic and reconstructive surgery from Saudi Arabia.

Methods: An electronic search was carried out using PubMed website for all plastic and reconstructive surgery-related articles published from Saudi Arabia. The type, subject, region, institute, and subspecialty were collected from the articles.

Results: A total of 142 articles were found, of which 45 were case reports (31.9%). The highest number of publications was 35 papers in 2018. Most of the papers were published from King Saud University (59.6%). A total of 123 articles (87.2%) were published from the central region of the kingdom. Hand surgery was the most common published topic, with 60 articles (43%).

Conclusions: We concluded that there is an increase in the number of publications in the recent 5 years. However, most of these publications are case reports and series, which are low-quality researches in the era of evidence-based medicine. (*Plast Reconstr Surg Glob Open* 2019;7:e2404; doi: [10.1097/GOX.0000000000002404](https://doi.org/10.1097/GOX.0000000000002404); Published online 30 September 2019.)

INTRODUCTION

Research plays an important role in the development of medicine. It helps in improving knowledge and advancing the respective fields.¹ In recent years, increasing numbers of researches in plastic and reconstructive surgery were published.²

In 2013, an article was published, reviewing researches published in plastic and reconstructive surgery from Saudi Arabia.³ It reported a smaller number of publications and lower level of evidence in those publications compared with the plastic surgery field worldwide.³ Since then, many medical schools, universities, and medical centers have been actively involved in plastic surgery and research. The aim of this study is to review the recent 5 years publications in the field of plastic and reconstructive surgery from Saudi Arabia.

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METHODS

This study was conducted in the plastic and reconstructive surgery department at King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia. The PubMed database was selected as it provided quality control for the publications through the Institute for Scientific Information (ISI). An electronic search was done in PubMed website to collect the articles. The following words were used to search in the PubMed database: Saudi Arabia, plastic surgery, reconstructive surgery, burn, microsurgery, craniofacial, hand surgery, and aesthetic surgery.

Inclusion criteria were studies carried out or published from Saudi Arabia in the field of plastic and reconstructive surgery. Only English-language ISI studies were included. Exclusion criteria were studies not conducted or published from Saudi Arabia, or involvement of non-Saudi institutions, non-ISI study. The data were collected from the publications in the last 5 years from January 2014 to December 2018.

The literature review was conducted by the junior author and discussed with the senior author, who decided the articles to be included or excluded from the study (Fig. 1).

Then again, each abstract was screened and reviewed, and if needed, the article was reviewed to extract the data. The details about the type of article, subject of publication,

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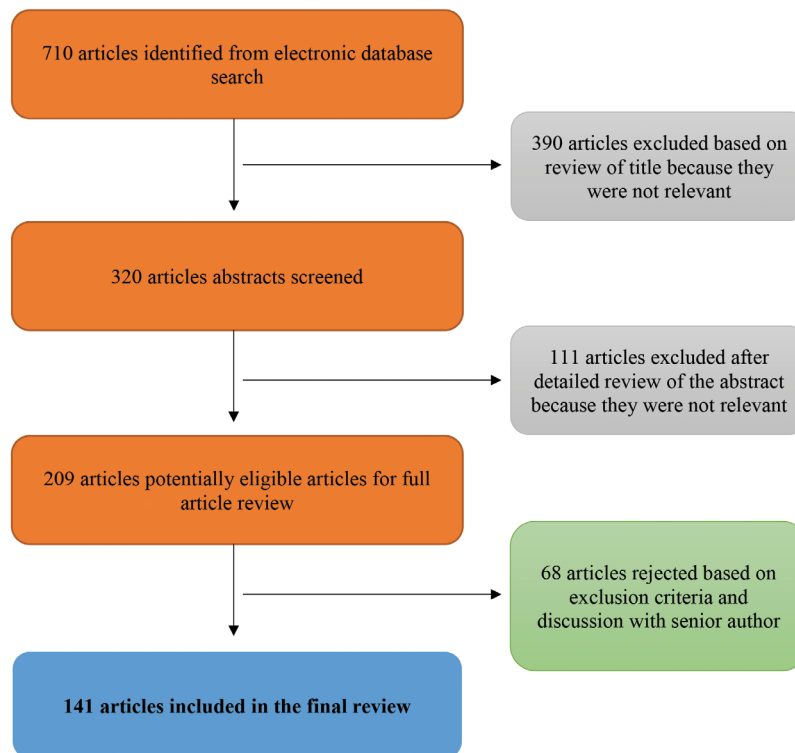


Fig. 1. Selection process of the articles included in the review.

year of publication, subspecialty, and institute were collected. If more than 1 Saudi institutes were involved in the article, it was referenced to the center with higher number of authors' contribution.

After reviewing all the data, articles were classified into subspecialties (hand surgery, microsurgery, aesthetic, burn, craniofacial, education, and basic science). Saudi Arabia is divided into 5 major regions, central region, western region (Red Sea coast), eastern region (Gulf coast), southern region (Yemen border area), and northern region (northern border). For each included article, the region was also noted.

The SPSS statistical software version 20 was used to analyze the collected data.

RESULTS

The total number of publications in the last 5 years, from January 2014 to December 2018, was 141 papers with an average of 28.2 publications per year.

The highest number of publications was 35 papers in 2018. The least number of publications was in 2015; only 23 articles were published (Fig. 2).

Most of the published articles were case reports. There were 45 published case reports (31.9%). Then, the second most common publications were the retrospective studies with 27 articles (19.1%). Case series was the third most common type with 23 articles (16.3%). Systematic review and meta-analysis were the least common type of publication with only 1 published article (0.7%) (Fig. 3).

The highest number of articles, 84 articles (59.6%), was published from the King Saud University.

King Faisal Specialist Hospital & Research Center was the second institute with 15 articles (15%). National Guard Hospital was the third institute with 9 articles (6.4%). King Abdulaziz University was the fourth with 7 articles (5%). Twenty-nine articles (14%) were from other universities and medical centers.

A total of 123 articles (87.2%) were published from the central region of the kingdom, 11 articles (7.8%) from the western region, and 7 articles (5%) from the eastern region. No articles were found from the south and north area.

Hand surgery was the most common topic, with 60 articles (43%). Microsurgery was the second common topic with 27 articles (19%). Craniofacial surgery and basic science were the third most common with 16 articles (11%) for each. There were 9 articles (6%) each for burn and aesthetic subspecialty. Last was medical education with 5 articles (4%) (Fig. 4).

DISCUSSION

Research plays an important role in advancing medicine, prevention of diseases, and improving health; thus, making a huge contribution towards the improvement in medical care.^{1,4} Like other nations, the contribution of Saudi Arabia to medical research has also increased globally.⁵ Although the field of plastic surgery in Saudi Arabia is still evolving, an increase in the number of publications was observed in the last 5 years. According to a study in 2013, a total of 330 studies in nearly 22 years with 15 publications per year was observed in plastic surgery.³ However, according to our study, 141 articles were published in the

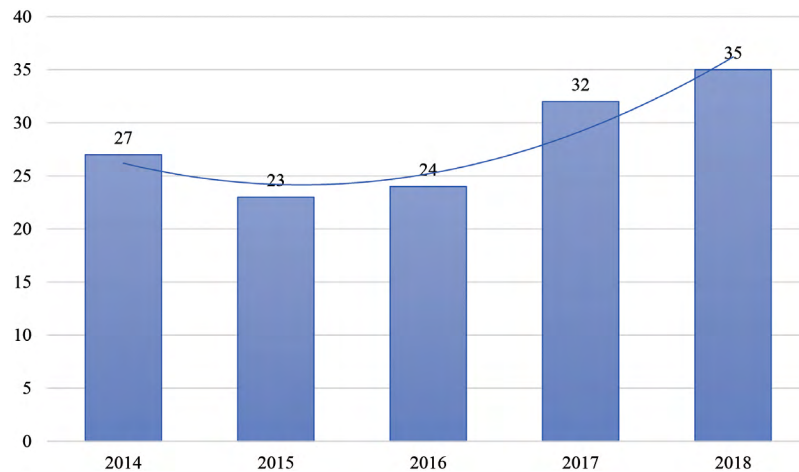


Fig. 2. Number of publications each year.

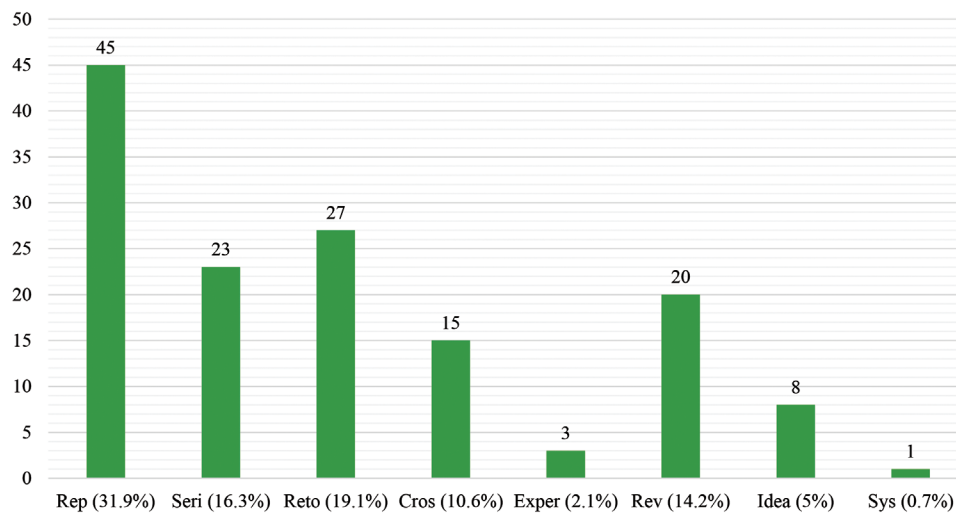


Fig. 3. Numbers and percentages of the type of publication. Rep, case report; Seri, case series; Reto, retrospective study; Cros, crosssectional study; Exper, experimental study; Idea, new ideas and innovations; Sys, systematic review and meta-analysis.

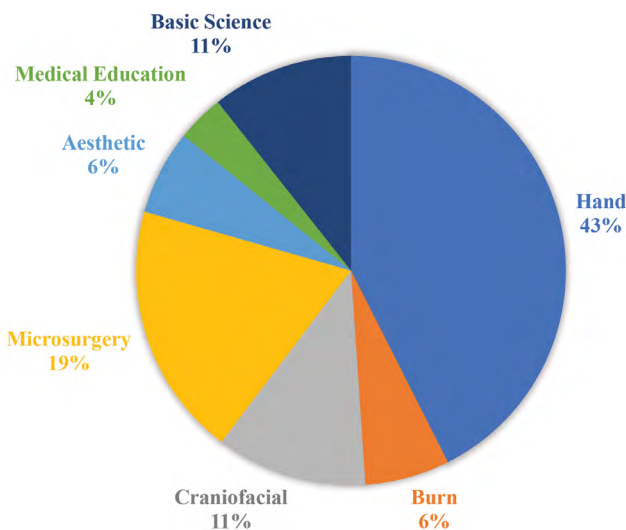


Fig. 4. Percentage of subspecialty of publications.

last 5 years with 28 publications per year, as we have considered the ISI articles only instead of each and every article. Therefore, our study does not reflect the true number of publications in the last 5 years.

In our study, most of the publications were found to be case reports (31.9%). After careful observation of the literatures discussing publications from Saudi Arabia, case reports and case series were found to be the most common publication in the field of clinical neurosurgery (47.5%) and plastic surgery, respectively (41.9%).^{3,6} However, a remarkable number of retrospective studies were observed in gynecology (21.5%) and orthopedics (40%).^{7,8} Taking into consideration these statistics, we assumed that the number of case reports was more because they were simple, less time consuming, and relatively effortless. Compared with case reports, difficulties were faced in collecting data on a large scale from different centers with the limited research assistances for research articles. From the senior author experience in Saudi Arabia, most Saudi plastic surgeons

are busy working in private sectors which constrain their time, so they tend not to do research, especially with limited grants and without any prestigious awards. However, no specific studies have been done with regard to that. We suggest that further studies be done in that area.

In our study, we found that King Saud University had the highest number of publications (59.6%), of which 37.9% were in clinical neurosurgery and 26.2% in gynecology.^{6,7} This was also consistent with a study done to evaluate the biomedical research in Saudi Arabia, wherein they found around 40% of the publication to be from King Saud University.⁹ This might be due to an established institute with the availability of more experienced surgeons and facilities.

In our study, we observed that most of the publications were from central region (87.2%). Interestingly, central region contributed to around 74% in clinical neurosurgery and 42.5% in gynecology (6, 7). This was also found to be consistent with study done to review biomedical research in Saudi Arabia, during which they found almost 55.9% published articles were from central region.⁹ This may have happened due to the involvement of high number of universities, old departments, big training programs, more workload, and financial support.

Most of the publications were on hand surgery. This might have caused by overlap between plastic surgery and orthopedic surgery; also, it may be that most senior plastic surgeons are interested in hand surgery.

This study has several limitations such as the data were collected from PubMed only. That is the reason, our study does not reflect the actual number of publications in the recent years. However, it was found that using PubMed leads to underreporting by about 15%, still an increase by that percent in our results will not change the principal finding in this study.^{10,11}

CONCLUSIONS

From this result, we found that only 1 systematic review in plastic surgery was published from Saudi Arabia.¹² Therefore, more focus should be given towards publication of systematic reviews and meta-analyses in future. Also, we noticed that most of the publications were from the central region, so we conclude that more areas can be involved in research by encouraging young surgeons and providing courses on research methodology located outside central region, awards for unique studies, more research grants, collaboration between institutes, and use of online editing services to increase rate of article

acceptance. We believe this article sheds a light on the recent contributions in the plastic surgery field in Saudi Arabia and colleagues from nearby countries can benefit from this article to improvise their scientific research and avoid our limitations in further studies.

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