



Surgical Research Output from Iraq from 1996-2022: Trends, Challenges, and Opportunities.

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Abstract:

Iraq's healthcare system was once considered one of the best in the region, with extensive infrastructure and skilled medical professionals. However, decades of war, sanctions, and political instability have taken a toll on the system. We compared the research output and country ranking of Iraq in 'Surgery' and 'Orthopedics and Sports Medicine'(OSM) and compared with the other Arab nations in these fields. Iraq witnessed a significant rise in the number of yearly publications in Surgery from only 2 in 1996 to 205 in 2022. The maximum publication surge was noticed in the last decade. During the cumulative period from 1996 to 2022 (27 years), there are a total of 938 publications in the SCImago database, accounting for 3.48% of 21 Arab nations, and ranking 8th amongst them. Whereas, in OSM, from 1996-2022, there were a total of 160 publications, with the 10th rank amongst 20 Arab nations. We believe that Iraq can restore its past glory of the 1970s by working towards building a more resilient and equitable healthcare system that meets the needs of its population, through their research on locally prevailing healthcare problems.

Keywords: Iraq; Research; Surgery; Orthopedics; Sports Medicine

Background

Iraq's healthcare system was once considered one of the best in the region, with extensive infrastructure and skilled medical professionals. However, decades of war, sanctions, and political instability have taken a toll on the system. The Iran-Iraq war in the 1980s, followed by the Gulf War in 1990-91 and the subsequent economic sanctions, severely damaged healthcare infrastructure, leading to a decline in services and medical expertise. Iraq had a centralized free and universal healthcare system in the 1970s and developed a Westernized system of sophisticated hospitals with advanced medical procedures, provided by specialist physicians and staff.^{1,2} Healthcare in Iraq has been a topic of concern for the last few decades, marked by a tumultuous history of

conflict, economic instability, and infrastructure challenges.

Surgical Research from Iraq

We curated the Scopus data from the SCImago website,³ which has the research output data of various countries from 1996-2022. We restricted our search to the specialities of 'Surgery' and 'Orthopedics and Sports Medicine'(OSM) to compare the trends of publications in these two surgical fields and compare the ranking of Arab nations in these fields.

Iraq witnessed a significant rise in the number of yearly publications in Surgery from only 2 in 1996 to 205 in 2022 (**Figure 1**). The maximum publication surge was noticed in the last decade.

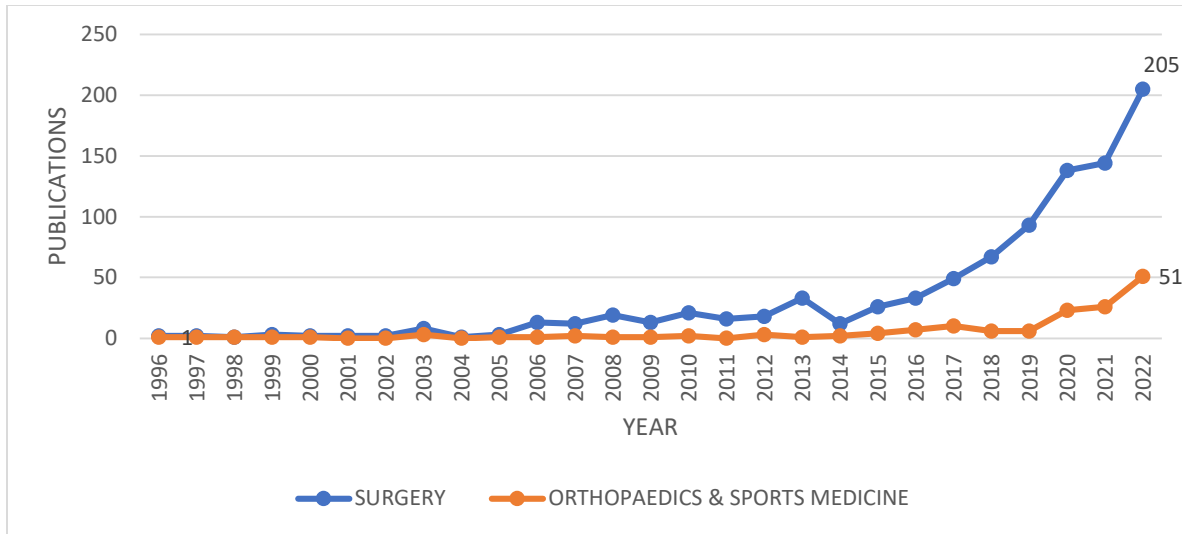


Figure 1: Trends of publications in Surgery and Orthopedic & Sports Medicine from 1996 to 2022 (Source: SCImago³)

During the cumulative period from 1996 to 2022 (27 years), there are a total of 938 publications in the SCImago database, accounting for 3.48% of 21 Arab nations, and ranking 8th amongst them (**Table 1**). Whereas, in OSM, from 1996-2022, there were a total of 160 publications, with the 10th rank amongst 20 Arab nations (**Table 1**), and a 1.80% share of total Arab publications. However, it must be taken into consideration that these publications were only from the journals which are listed in the Scopus and hence the publications which were not listed here and were published in other non-Scopus listed journals were missed out. For example, the Basrah Journal of Surgery is a leading surgical journal in Iraq ([Basrah Journal of](#)

[Surgery \(uobasrah.edu.iq\)](#)) but is not listed in the Scopus (but listed in the Directory of Open Access Journal) and hence its publications were not considered in this brief analysis.

From 1996 to 2005 there was a similar pattern of publications in Surgery and OSM, with surgery publications showing a slowly increasing pattern until 2015, and then surging up till 2022. However, in OSM, the publication trend has been rather sluggish until 2019, with an increase visible from 2020 to 2022, with a significant rise seen in 2020 (n=23), 2021 (n=26), and 2022 (n=51) (**Figure 1**).

Table 1: Bibliometric profile of the top 10 ranked Arab nations in Surgery and

Orthopaedics & Sports Medicine in the cumulative period from 1996 to 2022 (Source: SCImago³)

Rank	Country	Documents	Citations	Self-Citations	Citations per Document	H-Index
SURGERY						
1	Egypt	8180	80911	5557	9.89	85
2	Saudi Arabia	5833	61756	5391	10.59	74
3	Morocco	2270	8841	849	3.89	35
4	Lebanon	1821	23154	1114	12.71	57
5	Tunisia	1660	10319	803	6.22	41
6	United Arab Emirates	1536	17758	973	11.56	59
7	Jordan	976	11304	481	11.58	53
8	Iraq	938	6474	599	6.9	31
9	Qatar	864	7740	455	8.96	39
10	Kuwait	762	9151	266	12.01	46
ORTHOPEDICS AND SPORTS MEDICINE						
1	Egypt	2047	20762	1163	10.14	54
2	Qatar	1706	47191	4700	27.66	97
3	Tunisia	1250	25798	4124	20.64	73
4	Saudi Arabia	1229	18807	1432	15.3	57
5	Lebanon	630	8951	968	14.21	43
6	Morocco	576	3383	318	5.87	27
7	United Arab Emirates	473	6414	375	13.56	39
8	Jordan	281	3670	109	13.06	29
9	Kuwait	165	2454	106	14.87	26
10	Iraq	160	987	62	6.17	14

We found the leading Arab nation in ‘Surgery’ and ‘Orthopedics and Sports Medicine’ was Egypt followed by Saudi Arabia, Morocco, Lebanon, and, from 1996 to 2022. Whereas, in OSM, the leading Arab nations were Egypt, followed by Qatar, Tunisia, Saudi Arabia and Lebanon, with Iraq in 10th position (**Table 1**). In a bibliometric study, the medical research output of Arab countries was analyzed during the period 2006-2017. The authors concluded that the medical research output in these has increased but they are still lagging behind the rest of the world. These papers were involved in international collaborations in the majority, especially if these papers were led by authors from outside the local institution, and when published in the top 10% journals.⁴ A study revealed the trends and ranking of OSM-related publications from Middle Eastern countries, where Turkey was ranked first.⁵

Challenges

The main challenges facing healthcare in Iraq include infrastructure deficiency, shortage of skilled personnel (due to brain drain and limited training opportunities), especially in rural areas, lack of allocation of resources to

the healthcare system, security concerns and public health issues. Biomedical research in Iraq has faced a difficult time due to inadequate funding and resources.^{6,7} The prevalent security challenges have also created an adverse environment for scientific research, with researchers facing security concerns and limited access to certain terrains and people.⁸

Despite these challenges, there are sincere attempts to advance medical knowledge and improve healthcare outcomes in Iraq by many dedicated healthcare professionals and researchers through their tireless work.² Several researchers have been engaged internationally to overcome these challenges and have been able to make strides in research and development.⁹

Opportunities

Iraq has faced so many wars and consequently war-related injuries. Most of these injuries are severe and research such combat-wounded people can provide very useful information and data for the rest of the world, and be a source of innovation that may apply to civilian medical and surgical practice.¹⁰

There are opportunities for improvement in biomedical research through infrastructure investment, sourcing international aid and partnerships, capacity building by investing in the training and education of healthcare professionals, establishing medical schools, residency programs, and continuing education initiatives that can help build a sustainable healthcare workforce. In addition, collaborating with neighbouring countries and international organizations can facilitate knowledge sharing, technology transfer, and resource mobilization.

Moreover, several postgraduate training programs are operating in Iraq for surgical specialities like MSc, Doctorate, Fellowship

of Iraqi Medical Specialization, and Fellowship of Arab Board for Medical Specializations (<http://mohestr.gov.iq/en/>). These doctors can be quite useful in publishing their research in quality journals if properly encouraged, mentored and provided required research support.

By addressing these challenges and seizing opportunities for reform, we believe that Iraq can restore its past glory of the 1970s by working towards building a more resilient and equitable healthcare system that meets the needs of its population, through their research on locally prevailing healthcare problems.

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Work concept and design 1

Data collection and analysis 1,2

Responsibility for statistical analysis 1,2

Writing the article 1,2

Critical review, 1, 2

Final approval of the article 1,2

Each author believes that the manuscript represents honest work and certifies that the article is original, is not under consideration by any other journal, and has not been previously published.

Availability of Data and Material: The corresponding author is prompt to supply datasets generated during and/or analyzed during the current study on wise request.

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