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Review Article

Research Output in Orthopaedics and Sports Medicine from Afghanistan from 1996 to 2022

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Abstract: Despite the large land area and substantial population, the volume and impact of biomedical research from Afghanistan is limited compared to other countries due to factors such as ongoing conflict, limited resources, and brain drain. We studied the research output in Orthopaedics and Sports Medicine from Afghanistan from 1996 to 2022, using the Scopus data from the SCImago website. Afghanistan has published 17 papers, out of a total of 9872 papers from eight South Asian countries, with a share of only 0.17%, from 1996 to 2022. Afghanistan is only ranked higher than Bhutan and Maldives among South Asian countries, and its ranking among all the Asian countries is 21. There has not been a significant volume of orthopaedic research arising from Afghanistan. However, orthopaedic issues such as trauma-related injuries, congenital disorders, and musculoskeletal conditions are widely prevalent in Afghanistan. Biomedical research in Afghanistan faces various challenges, including limited funding, inadequate infrastructure, lack of trained personnel, political instability, and security concerns. However, opportunities for improvement exist through investment in infrastructure, training of healthcare workers, and expansion of healthcare coverage. Furthermore, enhanced research funding and collaboration are crucial to boost the research output. Addressing these challenges and seizing these opportunities is essential to ensuring access to quality healthcare for all Afghan citizens. Efforts to strengthen the healthcare system must be sustained and coordinated to achieve lasting improvements in health outcomes across the country.

Keywords: Afghanistan, South Asia, Research, Orthopedics, Sports Medicine.

BACKGROUND

As of 2021, Afghanistan's population was 40.2 million and it is one of the world's least developed countries. Since the late 1970s, Afghanistan's history has been dominated by extensive warfare, including coups, invasions, insurgencies, and civil wars [1]. Afghanistan's contribution to biomedical research is generally limited due to various challenges such as conflicts, lack of resources, and infrastructure. While Afghanistan faces these significant challenges, there have been efforts to conduct biomedical research in the country, like in infectious diseases (e.g., Tuberculosis and Hepatitis), maternal and child health, mental health, and non-communicable diseases (NCDs) like diabetes and cardiovascular diseases. However, it is important to understand that the volume and impact of biomedical research from Afghanistan may be limited compared to other countries due to factors such as ongoing conflict, limited resources, and brain drain.

Research Output from Afghanistan

We studied the research output in Orthopaedics and Sports Medicine (OSM) from Afghanistan from 1996 to 2022, using the Scopus data from SCImago website [2]. The number of publications related to OSM, arising from Afghanistan has been low and the 1st paper in SCImago was reported in 2008 and since there have been sporadic publications until 2022, when 3 publications were listed (Figure 1).

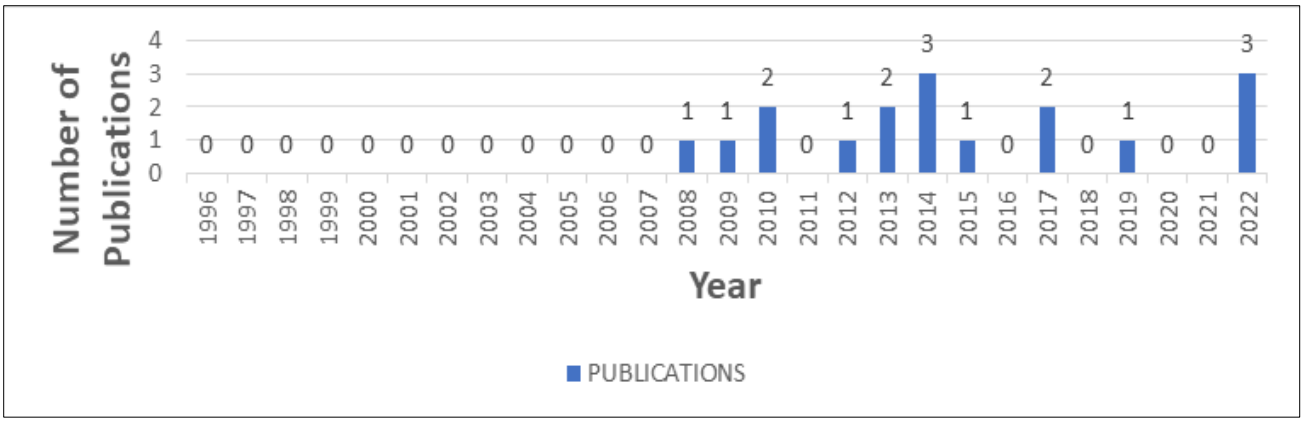

Figure 1: Trends of publications in Orthopaedics and Sports Medicine from Afghanistan from 1996 to 2022 (Source: SCImago[2])

Overall, Afghanistan has published 17 papers, out of a total of 9872 papers from eight south Asian countries, with a share of only 0.17%, from 1996 to 2022. Afghanistan is only ranked higher than Bhutan and Maldives among South Asian countries, and its ranking among all the Asian countries is 21 (Table 1).

It is to be emphasised that the publications and other data described here is based on the papers listed in the SCOPUS database only and hence any other publications from Afghanistan that are not listed in the SCOPUS could not be considered in this analysis.

Table 1: Bibliometric characteristics of Orthopedics and Sports Medicine publications from South Asian countries during 1996 to 2022 (Source: SCImago[2])

Country	South Asian Rank	Asian Rank	Total Documents	Total Citations	Self-Citations	Citations Per Document	H-index
India	1	4	9331	79760	13171	8.55	88
Pakistan	2	11	318	3157	291	9.93	28
Nepal	3	13	190	1772	81	9.33	20
Sri Lanka	4	15	104	3211	87	30.88	21
Bangladesh	5	16	84	1358	76	16.17	17
Afghanistan	6	21	17	133	6	7.82	6
Bhutan	7	26	4	12	0	3	2
Maldives	8	27	4	43	0	10.75	3

Challenges in Research

There has not been a significant volume of orthopaedic research arising from Afghanistan. However, orthopaedic issues such as trauma-related injuries, congenital disorders, and musculoskeletal conditions are widely prevalent in Afghanistan. Biomedical research in Afghanistan faces various challenges, including limited funding, inadequate infrastructure, lack of trained personnel, political instability, and security concerns. Additionally, access to advanced technology and equipment, as well as collaboration opportunities with international institutions, may be limited. These challenges are common in low and low-income-countries (LMIC) like all South Asian countries and the major interference to the country's ability to conduct high-quality biomedical research and contribute to global scientific advancements [3, 4].

An analysis of the research output of eight countries of South Asia—India, Afghanistan, Bhutan, Sri Lanka, Pakistan, Nepal, Bangladesh, and Maldives were carried out from 2012 to 2017. Although there was an increase in the publications, the overall quality and quantity of scientific output was still low in South Asia [5].

Opportunities for Improvement

Since 2002, Afghanistan has witnessed a knowledge and information boom, with opening of new universities and healthcare facilities. But, in a country of over 40 million people, the Afghanistan's researchers need the international research community's support [6]. Despite a huge load of health problems facing South Asian countries, including Afghanistan, the overall research output from the South Asian countries is poor as evidenced by the cumulative number of publications or a comparison on a global scale [3-7]. However, Vaishya *et al*., reported substantial growth in India's publications in OSM in the recent past, but suggested enhanced efforts to boost the research output from India and South Asian countries, through increased research funding and collaborations, regionally and globally [8-10].

We believe that the several strategies can help improve the research output and healthcare in Afghanistan (Figure 2).

Prioritizing investment in healthcare infrastructure is essential to expand access to quality healthcare services. Building centres of excellence and refurbishing hospitals, clinics, and primary healthcare centres can help address the infrastructure deficit in Afghanistan. Furthermore, efforts to train and retain healthcare professionals are crucial for strengthening the healthcare workforce. Incentives such as scholarships, higher salaries, and improved working conditions can help attract and retain skilled medical personnel. Enhanced research funding by the government and other agencies, and internation research collaboration is vital for enhancing the research output of the country.

Figure 2: Strategies for improvement in Healthcare and Research in Afghanistan

CONCLUSION

Healthcare and Research in Afghanistan faces numerous challenges, including conflict, limited infrastructure, and a shortage of healthcare personnel. However, opportunities for improvement exist through investment in infrastructure, training of healthcare workers, and expansion of healthcare coverage. Furthermore, enhanced research funding and collaboration are crucial to boost the research output. Addressing these challenges and seizing these opportunities is essential to ensuring access to quality healthcare for all Afghan citizens. Efforts to strengthen the healthcare system must be sustained and coordinated to achieve lasting improvements in health outcomes across the country.

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