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EDITOR'S NOTE

The invited editorial looks at the research background of Sri Lanka with particular reference to its position in the SAARC region.

As pointed out by the authors of the invited editorial, Sri Lanka does have the highest citation per article in the SAARC region being more than double that of its closest competitor, Bangladesh -42 vs. 20 citations per document. The authors suggest that this is probably due to the high quality of the articles that are published. This certainly is an extremely welcome notion as it suggests that the Sri Lankan orthopaedic community are very selective in what they research and a few key articles are published in select journals.

However, this theory does run contrary to one of the fairly well-established facts that there is a definitive link between quality and quantity when it comes to research. That is, institutions /researchers who do a 'lot of' research have a higher number of publications, and are the same group that also has a higher quality research¹. Looking at the data from Scimago², I have reproduced the top five countries that have the highest number of citations per article (table 1).

Table 1: Comparative bibliometrics parameters of the top 5 nations according to citations per document in Orthopaedic and Sports Medicine publications from 1996 to 2023 (Source: SCImago²)

Country	Rank	Documents	Citable documents	Citations	Self-citations	Citations per document	h-index
Papua New Guinea	1	2	2	3383	2	1691.5	0
San Mareno	2	12	12	772	1	64.33	5
Jamaica	3	46	45	2293	21	49.85	14
Mozambique	4	17	17	819	29	48.18	8
Kenya	5	141	133	6618	239	46.94	17

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As can be seen from Table 1, the country that has the highest citation rate is Papua New Guinea, which has published only two articles over a 16-year period. These five countries (Including Sri Lanka) are not ones that are normally associated with cutting edge research or technology. Therefore, it would seem that another explanation would be necessary to explain this phenomenon of an extremely high number of citations per document in the publications that are associated with these countries.

Interestingly the Scandinavian countries also have a high citation per document compared to that of the rest of the English-speaking world (table 2).

Table 2: Comparative bibliometrics parameters of Scandinavian nations, Sri Lanka, United states of America (USA) and the United Kingdom (UK) in Orthopaedic and Sports Medicine publications from 1996 to 2023 (Source: SCImago²)

Country	Documents	Citable Documents	Citations	Self-Citations	Citations Per Document	h-index
Finland	4861	4689	210511	18717	43.31	169
Norway	5862	5549	238870	26246	40.75	191
Sweden	10373	9753	421704	48637	40.65	233
Denmark	6853	6472	254714	32863	37.17	195
Sri Lanka	117	109	4948	92	42.29	23
USA	202855	188986	5976662	2712336	29.46	496
UK	54401	50438	1569965	339107	28.86	327

One metric that has not been discussed in the Invited Editorial is the h index³.

The h index is an author level metric. It is considered as a reflection of both the productivity and the citation impact of publications. The h-index is calculated by counting the number of publications for which an author has been cited by other authors, at least that same number of times. For instance, an index of 3 means that there are at least 3 publications that have each been cited at least 3 times. An author's h index cannot be more than the number of articles that has been published. Compared with the above quoted example, looking at an author who has 5 publications; where they have been cited 10, 9, 7, 3 and 2 times, will still, only have an h index of 3, as only three articles have been cited at least 3 times i.e. does not have 4 articles that have been at least cited 4 times. The index does have a time bias in that the longer one has been publishing the higher the index will be. This is a result of more citable work and also as time passes more of the original work will be cited. Therefore, looking at the presented data in the above tables 1 and 2, it can be seen, that the h index is probably overall a better tool to determine the quality and output of research rather than the conventional average of citations per publication.

Looking at the SAARC region...

The SAARC region houses one fifth of the global population (21%) on about 3% of the land mass of the world. One would assume that this degree of 'clinical density' of material will generate a proportionate amount of research. However, over the last 25 years from 1996 to 2021 it has contributed to only 1.45% of the world's orthopaedics and sport medicine research⁴.

The reasons for the overall paucity of the SAARC region research in Orthopaedics is a topic that merits a lengthier discussion, which should be attempted at another time. In this note two aspects are considered.

Firstly, the language in which the research is conducted. Almost all over the world most countries especially in the developed world have their entire education done in their mother tongue. Hence all aspects of education/research from informal teaching onwards to conferences, workshops, publications etc. inevitably happen in their mother tongue - The exception to this 'rule' are those countries that have been occupied by the British (and probably the French). As noted in the Invited editorial India ranks fourth in the Asia group. First is China which would be expected based on its population*. However, number two and three are Japan and South Korea that have a much smaller population compared to India. All three of these countries have their medical education in their mother tongue. This is in contrast to the SAARC region where medical education is offered only in a foreign language. It is a very well-established fact that education and understanding concepts best happen in one's mother tongue⁵. The fact is most Sri Lankans have their entire primary and secondary education right up to the university in Sinhala or Tamil. Then having gained entrance to the medical faculty, have to more or less switch 'overnight' to a foreign tongue i.e. English. The reality is that for most of the doctors (specialists

* Keeping in mind that since the end of 2022, based on the United nations population statistics India has overtaken China, to become the most populated country in the world.

included) in this country- based on personal experience- use of English happens only in a 'formal setting'- conferences, academic sessions, workshops, presentations etc... They communicate with patients in Sinhala or Tamil and the vast majority of the 'informal' ward/clinic teaching as well as communication with the ancillary staff- nurses, physiotherapists etc.. and even discussing a clinical problem between colleagues also happens in Sinhala or Tamil with the relevant English terms[†]. Therefore, it is not an unrealistic question to ask, how conducive is such an environment, to facilitate a process of continuous research in a foreign language?

Secondly, is the nature of the pattern of diseases in different regions. It has been a proven fact that journal content is being influenced by the industry⁶. The clinical case load is substantially different between countries of the SAARC region and that of the rest of the developed world. Most of the research that comes from these WEIRD (Western, Educated, Industrial, Rich and Democratic) has been questioned -as to their relevance to the rest of the world⁷. The vast majority of the orthopaedic surgery in Sri Lanka is associated with trauma and/or infections. Compared to the amount of acute work done, our 'elective work' is very minimal. In Sri Lanka, currently, the number of joint arthroplasties for both hip and knee, inclusive of the public and the private sector, has been estimated at an average of around 1,700 per year. Compare this to Australia with a similar population to Sri Lanka, where this number is 117,709. If one considers shoulder arthroplasties, this would be an estimated 10 per year in Sri Lanka against 8636 in Australia⁸. As can be seen, what is of fundamental interest to us -SAARC region- is unlikely to be of interest to the 'rest of the world'. Therefore, there is also a possibility that the research that is done in this part of the world is not being entertained for publications as well.

This being said it is my personal observation that the Sri Lankan orthopaedic community needs to look deeply in to the issues surrounding the lack of research and it is not purely a lack of biomedical advancement which is holding us back as suggested in the Invited Editorial.

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References

- Sandström, U. and P. van den Besselaar (2016).** "Quantity and/or Quality? The Importance of Publishing Many Papers." PLoS One 11(11): e0166149.
- Scimago (n.d.)** Scimago Journal & Country Rank portal. Retrieved 20th October 2024
- Hirsch, J. E. (2005).** "An index to quantify an individual's scientific research output." Proceedings of the National academy of Sciences 102(46): 16569-16572.
- Vaishya, R. and A. Vaish (2023).** "Orthopedic research output from SAARC countries in the last 25 years: 1996-2021." Journal of Bone and Joint Diseases 38(2): 131-133.
- Skutnabb-Kangas, T. (2013).** "Mother tongue medium education." The Encyclopedia of Applied Linguistics.
- Amarasekara S.S.** Who defines Truth ?, Editorial, SLJOS 2023; 09(01): 15-20
- Muthukrishna, M., A. V. Bell, J. Henrich, C. M. Curtin, A. Gedranovich, J. McInerney and B. Thue (2020).** "Beyond Western, Educated, Industrial, Rich, and Democratic (WEIRD) Psychology: Measuring and Mapping Scales of Cultural and Psychological Distance." Psychol Sci 31(6): 678-701.
- AOANJRR (2022).** Hip, knee and shoulder arthroplasty: 2022 Annual Report. Adelaide: Australian Orthopaedic Association;2022.

[†] Personal communication: Visiting orthopaedic surgeons from the SAARC region have agreed that this is what mostly happens in their respective countries as well.