

Human impact factor

Edgar A Samaniego ¹, Serdar Geyik ²

The concept of 'impact factor' has long been considered as a significant metric in academic publishing, particularly in the field of medical literature. Developed by Eugene Garfield in the 1960s,¹ the impact factor is a measure that reflects the yearly average number of citations that articles published in a particular journal receive. Its role in shaping research, guiding journal selection for authors, and influencing the direction of funding and academic careers cannot be overstated, although it is not without its controversies and limitations.

At its core, the impact factor serves as a proxy for the relative importance of a journal within its field.² High-impact journals are often perceived as more prestigious, attracting a higher quality of research submissions. For medical researchers and clinicians, publishing in such journals is not just a matter of academic accomplishment; it is also a means of ensuring their work achieves maximum visibility and influence among their peers. This visibility is crucial in the medical field, where the dissemination of research findings can directly impact clinical practices and patient outcomes.

The concept of the 'human impact factor' in healthcare, although less quantifiable than bibliometric indices like the journal impact factor, plays a crucial role in shaping patient outcomes, healthcare delivery, and the overall effectiveness of medical interventions. Unlike traditional metrics that focus on citation counts and publication prestige, the human impact factor revolves around the qualitative aspects of healthcare, including patient-centered care, empathy, communication, and the human elements inherent in the healthcare profession. The human impact factor in underserved areas, especially within the specialized field of endovascular surgery, is a multifaceted issue that encompasses the availability and accessibility of advanced medical interventions and also

the quality of patient care, the training and empathy of healthcare providers, and the broader socioeconomic and cultural barriers that patients face. Neuroendovascular surgery, being at the forefront of minimally invasive techniques for treating neurovascular diseases, requires sophisticated equipment and expertise and also a healthcare infrastructure that supports its high standards of care.

In underserved regions, the disparity in healthcare access is a glaring issue, with neuroendovascular surgery being no exception. This is even more notorious in certain areas of the world where access to resources and expert medical care is very limited. The human impact factor here is closely tied to the ability of healthcare systems to provide state-of-the-art care to populations that are geographically, economically, or socially marginalized. The scarcity of specialized healthcare professionals trained in neuroendovascular techniques exacerbates this issue, as does the limited availability of the advanced medical devices and the infrastructure necessary for such procedures. The consequence is a significant gap in the quality of care, leading to disparities in health outcomes for patients with vascular diseases in underserved regions. As an example, a survey from Mission Thrombectomy 2020 that included 75 countries showed a 460-fold disparity in the access to mechanical thrombectomy (MT) between low- and high-income countries.³ The survey mainly focused on MT, but the disparity in access to treatment of hemorrhagic stroke such as aneurysms and arteriovenous malformations is probably more dismal.

Moreover, the human impact factor extends to the realm of patient education and awareness in underserved areas. The lack of awareness about vascular health and the potential benefits of neuroendovascular interventions can hinder early diagnosis and treatment, leading to advanced disease states and worse outcomes. Healthcare providers in these areas play a crucial role in educating patients and communities about the signs and symptoms of neurovascular diseases and the available treatment options, thus directly impacting patient outcomes and quality of life.

Enhancing training and education for healthcare professionals in underserved

regions is a vital element of the human impact factor within the realm of neuroendovascular surgery. By initiating programs that equip local physicians and surgeons with neuroendovascular techniques, we can significantly increase the availability of these sophisticated treatments. Such educational initiatives expand local medical capabilities and also instill a sense of empowerment among healthcare workers. To this end, the Society of Neurointerventional Surgery (SNIS) has introduced an international mentorship program that pairs seasoned neurointerventional surgeons with practitioners in developing areas globally. The SNIS e-mentorship program aims to share best practices for managing neurovascular diseases, covering a spectrum of therapeutic approaches from neuroendovascular and open neurosurgical procedures to case-specific medical treatments. This method emphasizes a thorough understanding of preoperative and postoperative patient care, adapted to the unique challenges of neurointerventional surgery. By pledging to adapt patient management strategies to meet local needs, the program aims to integrate advanced medical and surgical practices into each unique setting, thus improving healthcare delivery in these communities. The cascading effect of mentorship will significantly bolster the human impact factor, with mentors enriching knowledge and skills, and mentees applying these advancements in their communities, ultimately benefiting patients directly.

The cultural and socioeconomic context in underserved areas also plays a significant role in the human impact factor. Cultural beliefs and practices can influence patients' willingness to seek and adhere to medical advice, including advanced treatments like neuroendovascular surgery. Economic barriers, including the cost of treatment and the indirect costs associated with seeking care, such as travel and loss of income, further complicate access to these life-saving procedures. Addressing these issues requires a holistic approach that includes community engagement, culturally sensitive care, and innovative financing models that reduce the economic burden on patients.

The implementation of telemedicine and mobile health technologies presents a promising avenue to enhance the human impact factor in neuroendovascular surgery in underserved areas. These technologies can bridge the gap between remote patients and vascular specialists, facilitating consultations, follow-up care, and even remote assistance during

¹Interventional Neuroradiology/Endovascular Neurosurgery Division, Department of Neurology, Neurosurgery and Radiology, The University of Iowa Hospitals and Clinics, Iowa City, Iowa, USA

²Radiology, Istanbul Aydin Universitesi, Istanbul, Turkey

Correspondence to Dr Edgar A Samaniego, Interventional Neuroradiology/Endovascular Neurosurgery Division, Department of Neurology, Neurosurgery and Radiology, The University of Iowa Hospitals and Clinics, Iowa City, Iowa, USA; edgarsama@gmail.com

procedures. This expands the reach of specialized neurovascular care and also fosters a more inclusive healthcare system that prioritizes patient-centered care, regardless of geographical and socioeconomic barriers.

Every day we see heartfelt testaments of the human impact factor. For example, the medical missions undertaken by individuals like David Hasan in conflict zones such as Gaza. His influence as a neurosurgeon is dramatically magnified when he applies his skills to serve populations with scarce medical support and limited healthcare options. In addition to performing surgeries under the challenging conditions often found in conflict zones, Hasan also endured moments when the entire hospital building shook due to nearby bombings. If we were to draw a parallel with academic publishing, the contribution of his work to these communities would be akin to escalating an impact factor exponentially, similar to the leap from publishing a case report in a less-known journal to authoring a randomized clinical trial in a leading publication. There lies immense potential in enriching communities worldwide through volunteer work, educating

the next wave of medical professionals, and offering mentorship both online and through in-person guidance across diverse regions. Engaging in these activities not only boosts our human impact factor but is also among the most fulfilling ways to enhance patient care and outcomes.

As healthcare providers, we are privileged with the opportunity to make a difference in people's lives. It is crucial, however, to continually consider how we can amplify our human impact factor. This could be achieved through educating the next generation about the art of medicine, offering our services to underserved communities, or simply by enhancing our interactions with patients who seek our expertise and care. By focusing on these efforts, every day has the potential to feel as rewarding as having our research featured in a leading medical journal.

X Edgar A Samaniego @esamaniego and Serdar Geyik @stroke

Contributors Both authors contributed equally.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Commissioned; internally peer reviewed.

© Author(s) (or their employer(s)) 2024. No commercial re-use. See rights and permissions. Published by BMJ.



To cite Samaniego EA, Geyik S. *J NeuroIntervent Surg* 2024;**16**:635–636.

Accepted 23 May 2024

J NeuroIntervent Surg 2024;**16**:635–636.
doi:10.1136/jnis-2024-022034

ORCID iDs

Edgar A Samaniego <http://orcid.org/0000-0003-2764-2268>

Serdar Geyik <http://orcid.org/0000-0003-0767-5628>

REFERENCES

- 1 Garfield E. Citation indexes for science; a new dimension in documentation through association of ideas. *Science* 1955;122:108–11.
- 2 Hirsch JA, Albuquerque FC, Fiorella D, *et al.* JNIS: factoring the impact. *J Neurointerv Surg* 2012;4:395–6.
- 3 Asif KS, Otite FO, Desai SM, *et al.* Mechanical Thrombectomy Global Access for Stroke (MT-GLASS): a Mission Thrombectomy (MT-2020 plus) study. *Circulation* 2023;147:1208–20.