Kidney health without borders: a multilingual kidney education platform

Kidney International (2026) **109,** 1062–1065; https://doi.org/10.1016/j.kint.2026.03.002

KEYWORDS: artificial intelligence; chronic kidney disease; kidney education; kidney health; multilingual resource; nutrition

Published by Elsevier Inc. on behalf of the International Society of Nephrology.

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Kidney disease affects >850 million people globally, contributing to premature mortality and increased health care costs.[1] However, opportunities for early intervention are often missed because of multiple system-level barriers, including limited kidney health literacy and the asymptomatic nature of early chronic kidney disease.

Recently, the United Nations recognized kidney disease as a major noncommunicable disease, reinforcing the global consensus on the urgent need to build awareness through World Kidney Day themes such as "Kidney Health for All."[2,3]

Most educational resources are available in English, which limits the widespread dissemination of information in non–English-speaking low- and middle-income countries. Automated tools, including artificial intelligence, allow the possibility of translation, but it frequently lacks accuracy and validation, further eroding patient trust.

This report highlights www.KidneyEducation.com, a patient education resource, curated by global experts, and outlines its development, governance, dissemination strategies, and global impact as an expert-driven, noncommercial educational tool with free access.

Governance and validation framework

Over 2 decades, a philanthropically supported initiative that began in a single Indian language (Gujarati) has evolved into a multilingual, expert-curated platform delivering high-quality, standardized, peer-reviewed, and conflict-free content to bridge knowledge gaps. The project was initiated by translating the English version into the most commonly used languages, with gradually adding less widely spoken languages. Each language translation and peer review required approximately 12 to 18 months, relying on native-speaking kidney experts to preserve cultural context and minimize semantic distortions. A free web-based delivery made the content easily accessible, downloadable, and printable across multiple devices. Table 1 outlines the safeguards against misinformation and bias.

Impact was evaluated using a framework that focused on reach by country, engagement (language-specific PDF downloads and longitudinal trends), credibility (expert-led authorship and independent governance without commercial influence), and equity (prioritization of native-language content for users in low- and middle-income countries). The low-cost website was not configured for data collection in its early years. Hence, tracking unique visitors was not an available option.

Global impact and outcomes

Sustained for nearly 2 decades, this web-based educational tool delivers comprehensive, kidney-focused health information in patient-friendly language while preserving medical accuracy and clinical relevance. The content is currently available in 39 languages, made possible through the collaboration of over 100 kidney experts from 24 countries spanning 5 continents.

Global reach and sustainability were evaluated using internet and online resource utilization metrics. Although the multilingual educational website has been available since 2010, technical limitations were resolved much later, allowing systematic end-user traffic and web analytics to be collected from May 2017 onward for this analysis.

Since May 2017, sustained user engagement and educational impact are evidenced by a cumulative total of 789,885 downloads. The number of downloads by individual language was recorded, although without granular details regarding the download modality (e.g., desktop vs. mobile) or unique visitors. The top 5 countries by visitor traffic were the Philippines (254,579; 32.2%), India (116,902; 14.8%), Tanzania (45,813; 5.8%), Malaysia (44,233; 5.6%), and Pakistan (33,175; 4.2%), followed closely by China, Ukraine, Serbia, Poland, and Ethiopia. The 5 most frequently downloaded languages were Hindi (72,829), Filipino (71,448), English (50,227), Gujarati (43,570),

Table 1 | Safeguards for quality control

Domain	Approach	Purpose
Governance	Practicing nephrologist	Ensure accuracy, accountability, and ethical stewardship
Equity orientation	Native-language prioritization	Improve access in low- and middle-income countries
Native-language translation	Human translation only	Maintain cultural appropriateness and context
Peer review process	Nephrologists with similar cultural background	Maintain consistency and avoid semantic errors
Standardization	Uniform core medical framework across all languages	Maintain consistency while allowing contextual adaptation
Conflict of interest	Voluntary work across all teams	Preserves independence and credibility
Financial model	Philanthropy	Avoids commercial bias

and Swahili (43,464), with Persian, Marathi, Urdu, Bengali, and Russian each recording between 21,317 and 28,206 downloads (Figure 1).

The country-wise analysis revealed that 63% of traffic originated from low- and lower-middle-income countries, with an additional 15% from upper-middle-income countries, indicating the platform's primary utility in resource-limited settings.

The language-wise utilization patterns highlight strong equity orientation. English language accounted for only 6% of the total downloads. The most accessed content was in non-English regional languages associated with middle- and lower-income countries. The top 5 languages accounted for 36% of all downloads, indicating concentrated use within specific linguistic populations.

Discussion

This descriptive report provides evidence that a clinician-led, multilingual, and noncommercial web-based resource (www.KidneyEducation.com) is capable of delivering equitable kidney health education at a global scale. Despite kidney disease affecting >850 million people worldwide, persistent gaps in awareness and access to trustworthy information in a lay-friendly language, particularly among non–English-speaking populations, remain significant barriers to effective prevention, early detection, and care.[4] This initiative provides a practical model for creating, translating, and disseminating kidney health knowledge across diverse linguistic and geographic settings.

A defining contribution of this platform is its emphasis on linguistic equity. English-centric kidney education resources disproportionately limit access to essential information in low- and middle-income countries.[5] By providing comprehensive content in 39 languages, the platform reduces linguistic barriers to access.

Notably, multilingual content was developed and validated by native-speaking kidney experts rather than by automated translation tools, ensuring medical accuracy and patient trust. This expert-led process preceded the availability of artificial intelligence–based translation technology and required approximately 12 to 18 months of manual translation and peer verification per language. The second edition of the English version was reviewed by 2 independent nephrologists before being approved for translation. For each language, the team leader and an additional nephrologist fluent in that language reviewed the English translation, and all necessary revisions were incorporated before publication. The peer review process allowed for minimal semantic distortion while preserving clinical intent and cultural nuances across languages.

The voluntary participation of >100 kidney experts from 24 countries across 5 continents without financial incentives reflects a shared

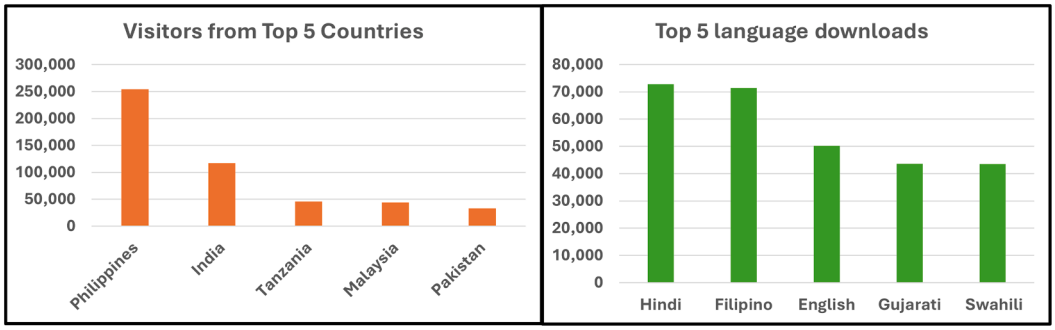

Figure 1 | Visitor traffic and language download data from 2017 to 2025 indicating primary utility in resource-limited countries.

professional commitment to global public health. This collective effort underscores the feasibility of sustaining a large-scale, noncommercial educational initiative driven by professional values rather than by commercial interests. The platform is designed to present broad, patient-centered principles of kidney health and management without asserting clinical outcomes or influencing disease progression. It categorizes kidney health information by consolidating prevention, diagnosis, general management approaches, dialysis modalities, transplantation pathways, and lifestyle guidance into a single, structured educational resource. This "1-stop" format supports sequential learning for patients and caregivers while reducing reliance on potentially unreliable or unverified sources. Free access through a web-based interface, downloadable PDFs, and dissemination via widely used messaging platforms, such as WhatsApp, further enhance accessibility and reach.

Usage analytics provide evidence of broad reach and continued use. The platform's success in addressing global kidney health knowledge gaps is evidenced by 63% of the traffic originating from low- and middle-income countries. Notably, English accounted for only 6% of downloads, whereas regional languages accounted for the remainder. This pattern underscores the platform's effectiveness in reducing language inequities in kidney health education.

The credibility of this resource is reinforced by its unrestricted access and philanthropic support, operating independently of commercial funding or financial obligations, but this is also a limitation to replicate this model for other health disorders. Recent global policy developments, including the inclusion of kidney disease in United Nations noncommunicable disease declarations, successive World Kidney Day themes, and the World Health Organization kidney health resolution, underscore the urgent need to translate this knowledge into scalable action.[6–8]

Despite these strengths, this educational resource has limitations. The volunteer hours required to translate the material into multiple languages were substantial. The English version was updated before undertaking this effort. However, maintaining an efficient workflow for future updates remains a limitation because of the significant cost and volunteer time required. Dietary guidance is biased toward cultures and foods consumed in India, and translated versions may not fully reflect the local dietary practices. Cultural contextualization beyond language translation remains limited. Furthermore, updating a comprehensive 200-page multilingual resource requires substantial time and sustained commitment from busy practicing kidney experts, representing a major challenge.

Despite these limitations, the web-based resource (www.KidneyEducation.com) offers an effective, practical, and replicable framework to improve kidney health awareness. This model can be applied to other noncommunicable diseases where language barriers impede wide dissemination of accessible knowledge, such as diabetes and hypertension. Although the project was supported by a single philanthropic family, a replicable framework should include a clear governance structure, standardized translation and independent validation steps, and defined hosting, tracking, and maintenance processes. Long-term sustainability could be achieved through institutional partnerships, shared ownership for content updates, and a low-cost digital dissemination model beyond initial philanthropic support similar to our project.

Conclusion

In conclusion, our collective efforts demonstrate that equitable, high-quality kidney health education can be delivered globally through a clinician-led, multilingual, noncommercial web-based resource. By combining expert-led content, unrestricted access, and consolidated resources, it provides a practical, scalable model to promote prevention and early awareness worldwide.

DISCLOSURE

All the authors declared no competing interests.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the contributions of nephrologists and physician leaders from different countries who prepared, translated, and reviewed the Kidney Education Book in their respective native languages. Their voluntary efforts, linguistic expertise, and commitment to patient education enabled the development and long-term sustainability of this pioneering, multilingual kidney education initiative. List of contributors is available on www.KidneyEducation.com.

FUNDING STATEMENT

This study did not receive any specific grants from any funding agency in the public, commercial, or not-for-profit sectors.

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