

Twitter as Educational Tool: A Global Web-Based Cross-Sectional Study on Social Media Behavior of Nephrologists



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Received 12 May 2023; revised 25 July 2023; accepted 7 August 2023; published online 19 August 2023

Kidney Int Rep (2023) **8**, 2469–2473; <https://doi.org/10.1016/j.ekir.2023.08.009>

KEYWORDS: educational tools; nephrologist; nephrology; webinar

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INTRODUCTION

Social media is the term used to describe openly and freely accessible user-generated content and communication that is posted on online platforms. The latest data on global social media reveal that 4.76 billion, that is, more than half of the world's population, are users of some form of social media.¹ Currently, the 2-way private communication (telephonic conversation, messages, and e-mails) has changed to a global dialog between individuals on network.² Hospitals, medical societies, and journals have also adopted the social media especially Twitter to disseminate their work.³ Approximately 14 years ago (in 2009), nephrology social media conducted its first virtual meeting in the form of a blog (Renal Fellow Network), and since then, it has grown to reach a larger audience.⁴ The most popular social media platform among the medical community is Twitter. The interaction of the nephrology community on Twitter is often addressed as #NephTwitter. Medical educators currently use Twitter as a potential classroom and disseminate information through “tweetutorials” which is a series of tweets that serve as a “tutorial” on a specific topic.⁵ Use of #NephTwitter allows us to discuss new research, exchange experiences, and indulge in scientific debates with experts in respective

field. It helps in building professional and educational environment.⁶ Today, the role of #NephTwitter in academic promotion, research dissemination, and coverage of annual conferences is well established.⁶ However, there is poor participation of nephrology community from some countries, and we aim to sensitize them toward the benefits of social media.

Though there is such an impact of social media, there is less than expected participation in the nephrology community. Thus, we designed this study to determine the use of Twitter in clinical practice and see its acceptance among nephrologists in low income countries. Our aims were to determine acceptance of Twitter among nephrologists in low income countries; to determine its impact on their clinical practice; and to determine reasons for the low acceptance in some countries. Detailed methodology can be found in [Supplementary Methods](#).

RESULTS

Overall, 504 nephrologists responded to our survey (the original Google Forms [English, French, and Spanish versions] are available as [Supplementary file](#)). Most respondents were comfortable with English language, 51 responded in French (mainly Democratic Republic of Congo), and 15 in Spanish language (mainly

El Salvador). [Supplementary Table S1](#) depicts descriptive analysis of the survey respondents, whereas [Supplementary Table S2](#) depicts the survey responses.

Most respondents were young males. Nephrology trainees around the globe were actively involved in this survey (27.6%). Respondents from Asia were mainly from India, Indonesia, and Bangladesh, and respondents from Africa were from Democratic Republic of Congo, Egypt, and Ivory Coast. In America, most respondents were from Central America. [Figure 1](#) reveals the countries and their corresponding participation.

Of the 504 respondents, there were 181 (35.9%) without a Twitter account. Some 44% respondents had not heard of the #NephTwitter community. Furthermore, 167 (33%) respondents admitted that they were occupied with other social media platforms, and 116 (23%) respondents believed that they were too busy to engage on Twitter.

[Figure 2](#) reveals the survey highlights. Most respondents (46.4%) spend 1 to 3 hours per day on social media. Approximately 78% respondents admitted that social media is more effective in disseminating current medical education and health information. Of the respondents, 41% nephrologists admitted that #NephTwitter helped them improve their clinical practice and a quarter of nephrologists admitted that it helped them prepare for their nephrology board certification examinations. For most nephrologists, the main objective for their presence on #NephTwitter was to get updated about recent advances in nephrology. Most nephrologists admitted that webinars were the most efficient tool for academic promotion and research

dissemination, whereas online journal clubs were most interactive. The International Society of Nephrology Education was the most followed Twitter community, and the International Society of Nephrology World Congress of Nephrology was the most attended conference online.

DISCUSSION

This is the largest online survey of nephrologists, to the best of our knowledge, with more than 500 respondents. The learning points of this survey have been depicted in [Table 1](#). It was a multilingual survey (English, French, and Spanish) which helped us penetrate better into diverse societies. There were a few respondents from North America and Europe also, but they were included in this study as most of them, we believe, were resident of low income countries and had been studying in their respective continent for a while.

Most respondents were young nephrologists with males accounting for approximately two-third of all respondents. We found out that more than a third of the respondents did not have Twitter accounts and almost half had not heard of #NephTwitter, but more engaged on other social media platforms such as Facebook and WhatsApp. It has been found that in the past few years, the percentage of women in nephrology has increased, but numbers still remain relatively low at approximately 25% as compared with males, and this may explain the predominance of males in our survey.⁷

Twitter is the most used social media platform by physicians all over the world. Nakagawa *et al.*⁸ studied



Figure 1. Countries with 5 or more respondents.

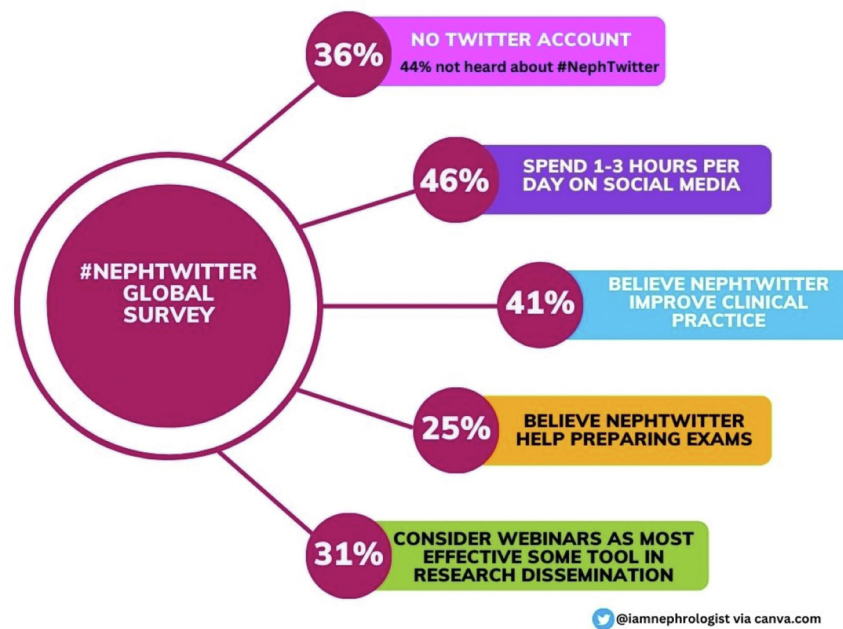


Figure 2. Survey highlights.

the Twitter usage among United States physicians from 2016 to 2020⁸ and observed that in over 5 years, the number of physicians tweeting had more than doubled with an increase by approximately 112%. In their study, they found that the most popular themes were general health, medical education, and mental health. In our study, we found a very low acceptance and uptake of Twitter among the respondents. This lower usage of social media platforms among nephrologists in low income countries could be as a result of increased workload due to low doctor-to-patient ratio,⁹ limited technology access,^{S1} concerns over privacy and confidentiality,^{S2} cultural factors, and language barriers. In most low-income settings, there is low nephrology workforce which may lead to very busy schedules because there is increasing incidence and prevalence of kidney disease in low-income settings.^{S3-S5} This accounts for the lower time spent on Twitter as our survey

revealed that most (approximately half) spent 1 to 3 hours on social media per day. Similar behavior of health care professionals has been reported by Khan *et al.*^{S6} in their study published in 2021 where they found that approximately 60% health care professionals spent 1 to 3 hours per day on social media forums.

Another reason for the low patronage of Twitter was that some respondents were using other social media platforms other than Twitter. In 2016, Diug *et al.*^{S7} had reported that among 90% of biomedical students who reported previous use of social media, 87.2% reported using Facebook, as compared with 13.1% using Twitter. Among various social media platforms, apart from Twitter, Facebook and WhatsApp have also been increasingly used by health professionals for both personal and professional activities.

Most respondents of our survey admitted that they were getting benefited educationally by way of social

Table 1. Learning points

What is already known about this subject:

1. Twitter (#NephTwitter) is the most popular social media platform among the Nephrology community.
2. Currently, the role of #NephTwitter in academic promotion, research dissemination, and coverage of annual conferences is well established.
3. Though there is such an impact of social media, there is less than expected participation in the nephrology community.

What this study adds:

1. This is largest online global survey of nephrologists according to our knowledge.
2. One-third nephrologists did not have Twitter account and 44% had not heard about #NephTwitter.
3. Approximately 78% respondents admitted that social media is more effective in disseminating current medical education and health information and 41% nephrologists admitted that #NephTwitter helped them improve their clinical practice.

What impact this may have on practice or policy:

1. Though #NephTwitter is accepted globally as effective educational tool, it has low acceptance among some nephrologists in low income countries.
2. We need to sensitize nephrologists toward virtual platforms for barrier-free dissemination of knowledge.

media engagement. Most nephrologists reported that they were adapting to social media platforms to stay updated with current medical education and to improve their clinical practice. Furthermore, a quarter of nephrologists admitted that it helped them prepare for their nephrology board certification examinations. This impact seems to be universal as most studies have revealed a positive effect of social media usage on health care professionals. Almainan *et al.*^{S8} revealed in their survey that approximately three-fourths of physicians had reported a significant impact of Twitter usage on their medical knowledge and clinical practice. Similarly, Panahi *et al.*^{S9} had conducted a survey on physicians in 2016 and found that sharing knowledge and engaging in continued medical education were one of the reasons they had joined social media. Similar views have been shared by Pershad *et al.*^{S10} and Choo *et al.*^{S11}

Webinars are online educational events that are conducted over the internet, primarily targeting health care professionals. The term “webinar” is a combination of “web” (referring to the internet) and “seminar” (referring to an educational session or conference). In our survey, most nephrologists admitted that webinars followed by visual abstracts were the most efficient tool for academic promotion and research dissemination. Webinars as social media tool is especially valuable for these reasons. Webinars can be an effective social media tool for sharing knowledge, collaborating with colleagues, and engaging with a wider community. Webinars are also interactive and allow attendees to ask questions and get involved in discussions. It can admit large number of participants from various parts of the world and make recordings available for those who miss these sessions. Hence, nephrologists can still be at post in their institutions and benefit from excellent presentations when they log on to webinars.

As social media influence continues to expand, it becomes increasingly important for nephrologists and researchers to use these novel social media strategies to increase the impact of their research work. Altmetrics or alternative metrics are novel metrics that track the attention that scholarly outputs are receiving in nontraditional sources such as newsletters, blogs, and social media posts. These alternative metrics record research disseminations beyond traditional journal citation indices.^{S12} Similarly, in the past couple of years, visual abstracts have significantly augmented the research dissemination by increasing awareness and readership of journal publications.^{S13} The highlight is the key findings on a page to help with information disseminations and presentations.

We found that a significant number of nephrologists get involved in conferences virtually by going through

live-tweeting and live social media coverage. This novel way of attending conferences helps nephrologists decrease financial burden and stay updated on the latest research. Twitter remains the primary social media platform for real-time scientific conference updates.^{S14} COVID-19 pandemic has created a cultural change in nephrology conferences and workshops. More nephrologists now attend the conferences virtually or stay informed through #NephTwitter community.

The utilization of social media in medical education has its limitations that need to be acknowledged. One significant challenge is the lack of stringent oversight and limited peer review of the content shared on these platforms. This can result in the dissemination of inaccurate or misleading information, potentially affecting the quality of medical education. Furthermore, the presence of high altmetric scores, which measure social media engagement, does not guarantee the reliability or accuracy of the data or information being shared. However, it is important to note that social media platforms also offer valuable educational avenues. Efforts should be made to identify and promote reliable sources of information and educational material within these platforms. By highlighting trustworthy accounts, reputable organizations, and verified experts, health care professionals can access more reliable and evidence-based resources, thereby enhancing the educational value of social media in the medical field.

CONCLUSIONS

Though #NephTwitter is accepted globally as an effective educational tool, it has low acceptance and uptake among some nephrologists in low income countries. There is the need to sensitize nephrologists toward virtual platforms for barrier-free dissemination of knowledge to assist in keeping their practice up-to-date.

DISCLOSURE

All the authors declared no competing interests.

ACKNOWLEDGMENTS

Data Availability Statement

Data have been generated over Google Forms and are available with the corresponding author and online too. [https://docs.google.com/forms/d/1kFWg6U1xUrZdLbL_6PI7FSrs832egN7wuXs5g6iVVvl/edit]

AUTHOR CONTRIBUTIONS

All authors contributed equally in conception and designing the work, acquisition, analysis, and interpretation of data for the work; and drafting the work and revising it critically for important intellectual content.

SUPPLEMENTARY MATERIAL

[Supplementary File \(PDF\)](#)

Supplementary Methods.

Supplementary References.

Table S1. Descriptive analysis.

Table S2. Responses to the questionnaire.

Original Google Forms—English, French, and Spanish versions.

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