

# Exploring differences in perceptions around Social Media Competencies: An Expert vs. Frontline User Study

## Sosyal Medya Yetkinliklerine Yönelik Algılar: Uzmanlar ve Ön Saftaki Klinik Çalışanların Arasındaki Farkların İncelenmesi

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### Abstract

**Aim:** Scholarly communities increasingly interact using social media (SoMe). This study investigated curricular expectations of expert and frontline SoMe users, with the goal of identifying differences that might inform the development of a curriculum designed to teach clinicians and researchers the effective use of SoMe.

**Methods:** From May 15 to August 28, 2020, we recruited participants via the METRIQ study recruitment protocol. Participants were stratified into “expert” and “frontline” users based on prior experience with SoMe. “Expert” users were defined as having published SoMe research, run SoMe workshops, or through the use of a popular #SoMe account. All others were categorized as “frontline” users. Participants completed a 14-question survey (with 90 sub-questions) regarding the content, skills, and attitudes that they believed should be taught to educators or researchers new to SoMe.

**Results:** In total, 224 users were invited, and 184 users filled out the survey.

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Experts were more likely to recommend teaching clinicians to use blogs (88% vs 74%), Facebook (46% vs 32%), Instagram (51% vs 34%), Medium (16% vs 4%), Snapchat (15% vs 4%), TikTok (29% vs 12%), and Twitter (97% vs 88%)

compared to frontline users. Experts were more likely to recommend SoMe to foster communities of practice (83% vs 66%), disseminate research (80% vs 67%), and promote engagement for knowledge translation (86% vs 74%) compared to frontline users.

**Conclusions:** There are few differences between the SoMe curricular expectations of expert vs. frontline users. These results could inform the creation of resources for teaching clinicians and researchers how to effectively use SoMe.

## Özet

**Amaç:** Akademik topluluklar, sosyal medyayı (SoMe) kullanarak daha fazla etkileşime girmektedir. Bu çalışma, klinisyenlere, eğitimcilere ve araştırmacılara SoMe'nin etkin kullanımını öğretmek için bir eğitim programı oluşturulmasına dayanak sağlayacak uzmanlarının ve ön saftaki klinik çalışanların görüşleri arasındaki farkları incelemektedir.

**Yöntem:** Katılımcılar, 15 Mayıs ile 28 Ağustos 2020 tarihleri arasında METRIQ çalışma protokolü kullanılarak araştırmaya davet edilmiştir. Katılımcılar, SoMe ile önceki deneyimlerine dayalı olarak "uzman" ve "ön saf" klinik çalışan kullanıcı olarak sınıflandırılmıştır. "Uzman" kullanıcılar, SoMe araştırması yayınlayan, SoMe çalışmaları yürüten veya popüler bir #SoMe hesabı yöneten kişiler olarak tanımlanmıştır. Diğer katılımcılar ise "ön saf" olarak tanımlanmıştır. Katılımcılar, SoMe'de yeni olan eğitimcilere veya araştırmacılara öğretilmesi gerektiğine inandıkları bilgi, beceri ve tutumlarla ilgili 14 soruluk bir anketi (90 alt soruyla) yanıtlamıştır.

**Bulgular:** Toplamda 224 kullanıcıya anket linki gönderilmiş ve 184 kullanıcı anketi doldürmüştür. Uzmanların ön saf kullanıcılara kıyasla blog (%88'e karşı %74), Facebook (%46'ya karşı %32), Instagram (%51'e karşı %34), Medium (%16'ya karşı %4), Snapchat (%15'e karşı %4), TikTok (%29'a karşı %12) ve Twitter (%97'ye karşı %88) platformlarını öğretmeyi önerme olasılıkları daha yüksek bulunmuştur. Uzmanların, ön saf kullanıcılara kıyasla uygulama topluluklarını teşvik etmek (%83'e karşı %66), araştırmaların yaygın etkisini genişletmek (%80'e karşı %67) ve bilgi dönüşümü için katılımı teşvik etmek (%86'ya karşı %74) maddelerinde SoMe'yi önerme olasılıkları daha yüksek bulunmuştur.

**Sonuç:** Uzman ve ön saf klinik çalışanların SoMe eğitim programına yönelik beklentileri arasındaki farklar önemsiz derecede azdır. Bu sonuçlar, klinisyenlere, eğitimcilere ve araştırmacılara SoMe'nin nasıl etkin bir şekilde kullanılacağını öğretmek için kaynakların oluşturulması konusunda bilgi verebilir.

## INTRODUCTION

Social Media (SoMe) is a ubiquitous source of news, opinion, and social connection. Its tools and platforms are increasingly being used by medical researchers and scholars for discussion, collaboration and professional development (1,2). Scientists have a particularly important role in online communities where they can combat misinformation, engage in education, and advocate for evidence-informed policy (3–10). This role became particularly important in 2020 with the Coronavirus disease 2019 (COVID-19)

pandemic, both highlighting these challenges and facilitating much-needed accessibility, connectivity and knowledge dissemination of

up-to-date information (11–14). Thought leaders in the health professions have created educational blogs, podcasts and tweet chats which have grown huge followings and paved the way for others (15,16). These experts SoMe practitioners have demonstrated awareness and facility in using SoMe for these purposes. However, engaging frontline health professionals in this relatively new domain can still be challenging due to perceived medicolegal risks, concerns about professionalism, mistrust of information and a tendency to associate social media with recreation, rather than professional development (17).

As with all skills, becoming an expert user of social media requires learning and effort (18). Indeed, though many healthcare providers will have developed their professional identities, it seems that when they enter into the SoMe world, they must discover their digital selves (19). Curricula could be designed to support the development of healthcare providers on SoMe, but the content of such a curriculum has not been determined.

We sought to co-construct objectives for a social media curriculum targeted at healthcare providers by investigating the perceived learning needs of expert and non-expert SoMe healthcare professionals. This study is part of a larger METRIQ project focused on identifying the core competencies that modern scientists, teachers, and clinicians should have as they engage online.

## **METHODS**

### ***Design and Conceptual Framework***

Survey design has been used to gather opinions and perceptions of SoMe users. This study is the first part of a two-part study designed to identify social media competencies for educators and knowledge translators within the health professions. Specifically, we sought to identify discrepancies in expectations among frontline and expert users regarding these competencies with the goal of eventually developing resources to train users of online resources to ultimately become competent resource producers. This approach was informed by Carvalho et. al (20) who studied undergraduate and graduate students' attitudes and perceptions toward podcast use and creation as an educational tool. While undergraduate students only listened to podcasts, graduate students created their own podcasts in order to familiarize themselves with this modality and understand the process of producing one; graduate students reported that this process of producing content highlighted the pedagogical potential of podcasts (20).

### ***Participant Recruitment***

From May 15 to August 28, 2020, we recruited participants via the METRIQ study recruitment protocol (21). In brief, a link to an online registration survey was distributed via the METRIQ study Twitter account ([@METRIQstudy](#)) and amplified through retweets by the study authors and other Twitter users. It was additionally distributed via email to participants of prior related METRIQ studies, as well as via various listservs targeting groups of medical educators. Those who filled out the intake survey were registered for the study and received a formal invitation to participate.

Participants were stratified into "frontline" and "expert" users based on information collected within the registration survey. "Expert" users met at least one of the following three criteria: 1) having published at least one publication related to social media, 2) having organized a social media teaching workshop, 3) having run a popular social media handle. There were no exclusion criteria for experts. The remainder of the participants were considered frontline users. As social media is considered an emerging area of scholarship, prior literature has supported this distinction by considering experts as those who have taught nationally on the subject, written multiple publications in this area, and/or having run impactful social media platforms (22–25).

### ***Data Collection and Analysis***

A two-step data collection tool was created. We used an intake survey to gather demographics and attributes of the volunteer healthcare providers who registered for the study. Our second survey was designed by YY, PP and TC based on a synthesis of data from prior studies (4,19,26). It consisted of 14 questions with 90 sub-questions in four components: knowledge, platform choices, skills and competencies, and attitudes that should be taught to educators or researchers new to social media (see Appendix A). The two surveys were linked to allow responses to be

designated as either belonging to frontline or expert user groups. The survey was created using LimeSurvey (Hamburg, Germany) and pilot-tested with non-participant users. We conducted cognitive interviews with two members of our investigatory team, asking each to view our survey and think aloud so that we could test and ensure that the items were adequately worded and interpreted as designed (27).

Data were analyzed with descriptive statistics on SPSS version 26.0 (IBM Corporation, Armonk, NY) to compare the frontline vs. expert user groups. Microsoft Excel was used to create the graphs.

### Ethics

This study was reviewed by the Hamilton Integrated Research Ethics Board and deemed exempt since it is considered a needs assessment.

## RESULTS

### Demographics

The intake survey was accessed by 1,553 targeted users. In total, 224 registered to participate and 184 completed the study (91% response rate) including 92 frontline users and 92 experts. A higher proportion of frontline users identified as female. The demographics of the participants are presented in Table 1.

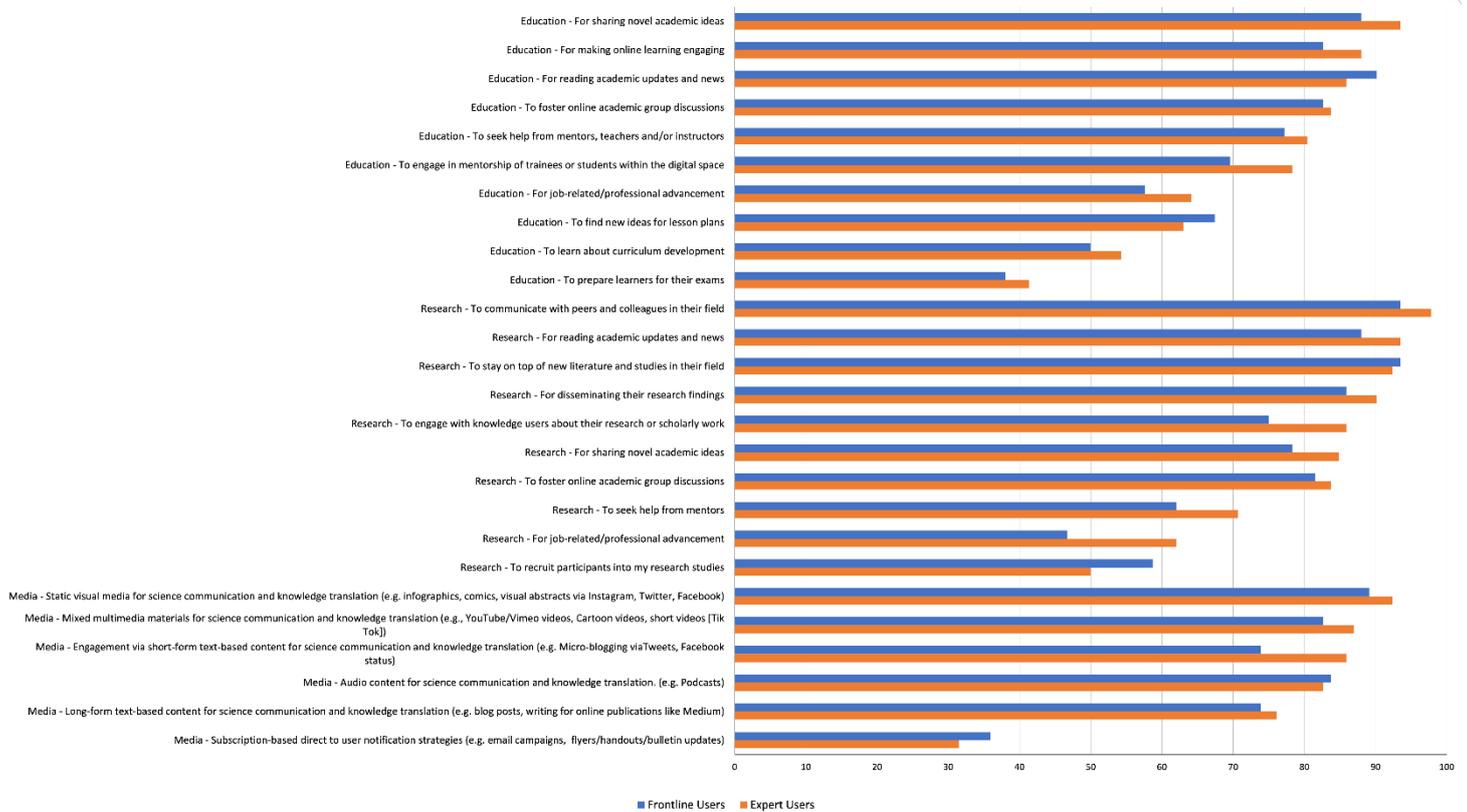
**Table 1.** Table With Demographic Information for Frontline and Expert Social Media Users

| Demographic Variable   | Frontline users<br>(n=92) | Expert users<br>(n=92) |
|--|---------------------------|------------------------|
| Age (Mean±SD)  | 38.71±7.20                | 38.93±8.37             |
| Gender (% female)  | 46.7%                     | 34.80%                 |
| <b>Academic Rank</b>   |                           |                        |
| Assistant Professor / Assistant Clinical Professor                       | 29% (27)                  | 27% (25)               |
| Other  | 23% (21)                  | 21% (19)               |
| Resident / Registrar   | 12% (11)                  | 9% (8)                 |
| Associate Professor / Associate Clinical Professor                       | 21% (19)                  | 18% (17)               |
| Assistant Professor / Assistant Clinical Professor / Consultant          | 4% (4)                    | -                      |
| Lecturer / Instructor  | 4% (4)                    | 7% (6)                 |
| Professor / Clinical Professor   | 3% (3)                    | 5% (5)                 |
| Fellow   | 2% (2)                    | 2% (2)                 |
| Adjunct / Affiliate Professor  | 1% (1)                    | 2% (2)                 |
| Medical Student  | -                         | 3% (3)                 |
| Senior Lecturer / Instructor   | -                         | 3% (3)                 |
| Student  | -                         | 2% (2)                 |
| Number of users who have ever organized a social media teaching workshop | 0                         | 75                     |
| Median number of social media publications (Minimum and Maximum)         | 0 (0-2)                   | 1 (0-60)               |
| Total number of popular social media handles                             | 0                         | 63                     |

### Knowledge Component

The preferences for 24 of 26 knowledge-based sub-items were similar for between expert and frontline users. However, notably, a greater proportion of expert users believed that users of social media should be aware that it can be used for job-related or professional advancement (62% vs 46.7%). While this trend was similar for responses regarding using social media to

engage with knowledge users about scholarly content, this difference was not substantial (85.9% vs 75%). One of the notable differences for media knowledge was microblogging via Tweets or Facebook for engagement using short text-based content (85.9% vs. 73.9%). These findings are demonstrated in Figure 1.



**Figure 1.** Endorsement Rates for Knowledge Component of Social Media Teaching Curriculum

### Platform Choices

We found no differences between expert and frontline users on 21 of the 28 sub-items about social media platforms. However, a significantly greater proportion of expert users believed that blogs (88% vs. 73.9%), Facebook (45.7% vs. 31.5%), Instagram (51.1% vs. 33.7%), Medium (16.3% vs. 4.3%), Snapchat (15.2% vs. 4.3%), TikTok (29.3% vs. 12%) and

Twitter (96.7 vs. 88%) should be included in a social media teaching curriculum for novice users. Conversely, while these results were not significant, a greater proportion of frontline users preferred mobile apps (38% vs. 26.1%), WhatsApp (37% vs. 34.8%), and wikis (22.8% vs. 19.6%) compared to expert users. These findings are summarized in Figure 2.

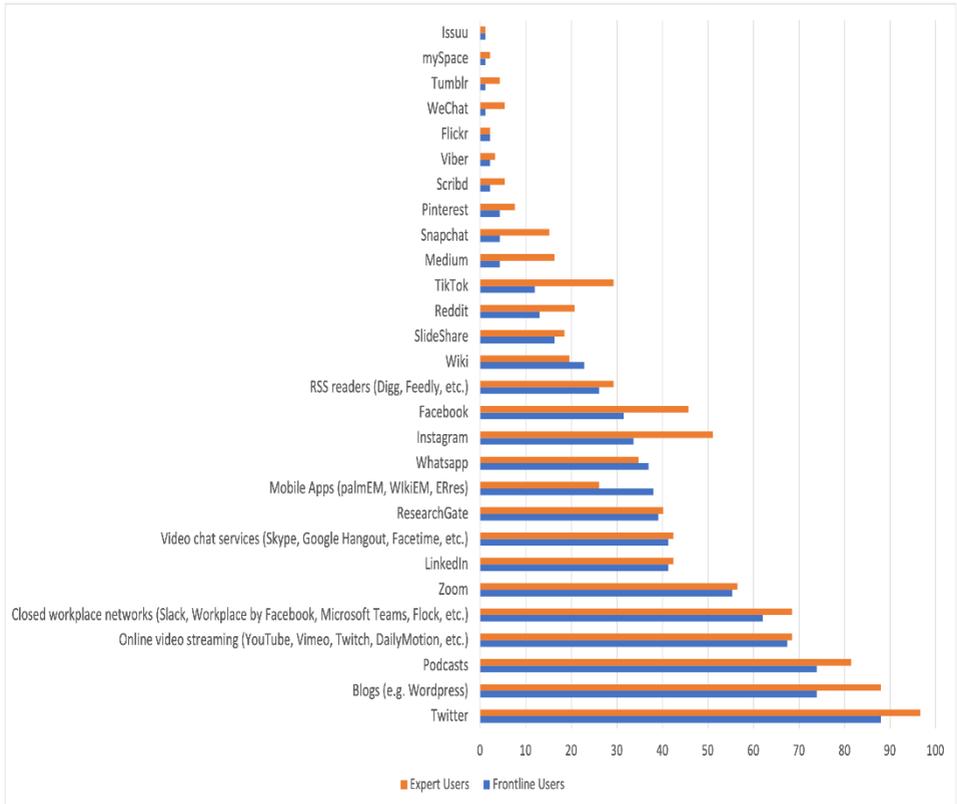
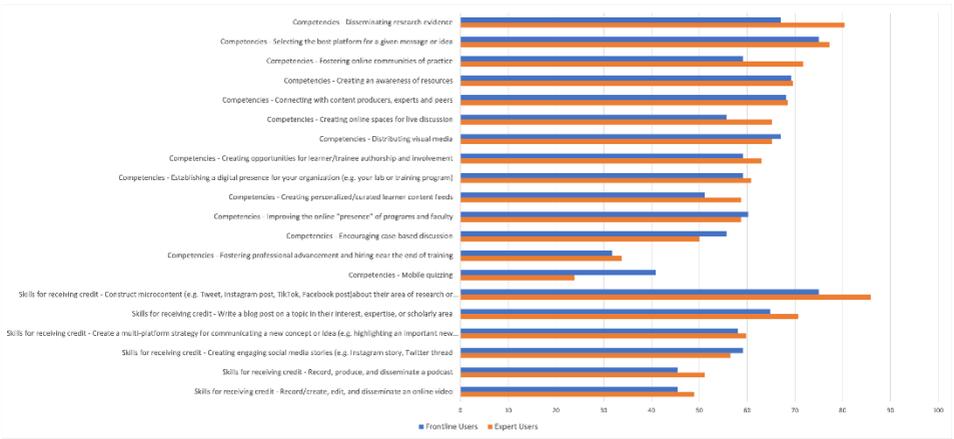


Figure 2. Platform Choices

### Skills and Competency Component

We found no differences between expert and frontline users on 18 of the 20 skills- and competency-based sub-items. A greater proportion of frontline users indicated that mobile quizzing should be a basic competency demonstrated via social media (40.9% vs. 23.9%). Conversely, a significantly greater

proportion of expert users believed that disseminating research evidence should be a basic competency demonstrated via social media (80.4% vs. 67%) and should be encouraged within a social media teaching curriculum. These findings are summarized in Figure 3.

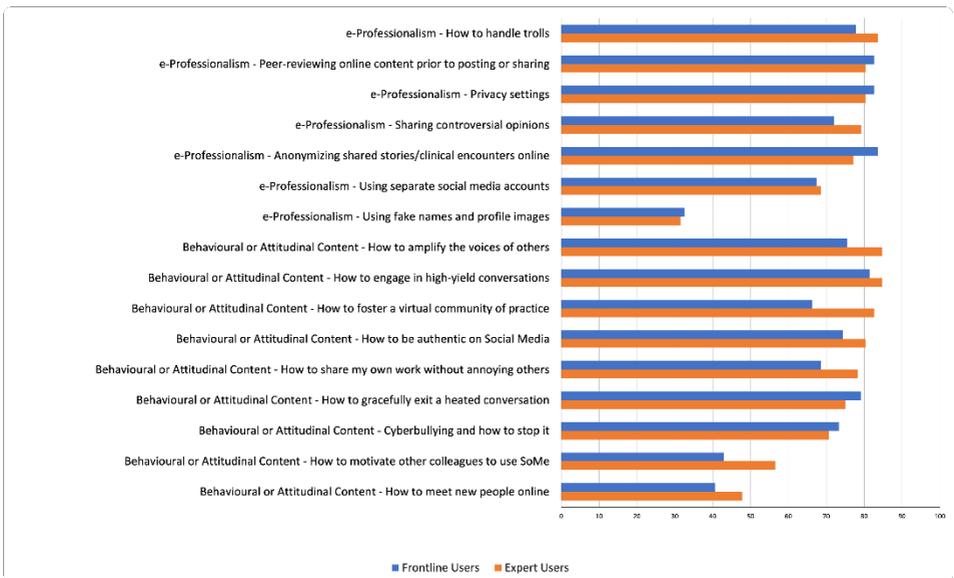


**Figure 3. Skills and Competencies Component for Social Media Curriculum**

### Attitude Component

We found no differences between expert and frontline users on 15 of the 16 attitudes-based sub-items, with the exception that a greater proportion of expert users indicated that fostering virtual communities of practice should be a key attitude integrated into a social media teaching curriculum (82.6% vs. 66.3%). There were no differences in expectations of basic

competencies of a social media curriculum in terms of the need to anonymize clinical encounters when shared online (83.7% vs. 77.2%), using fake account names and images (32.6% vs. 31.5%), peer reviewing content prior to sharing (82.6% vs. 80.4%), and privacy settings (82.6% vs. 80.4%). These findings are summarized in Figure 4.



**Figure 4. Attitude Component of Social Media Curriculum**

## DISCUSSION

Social Media has taken a large and expanding role in academic discourse, with a number of articles and blog posts purporting to teach academicians who are novices to SoMe how it should be used. We investigated the perceptions and expectations of frontline clinicians and how these differed from those with expertise in social media in the health professions. In addition, we stratified these expectations between experts and frontline SoMe users to identify gaps and better inform our curricular design.

Our results demonstrated that there were differences among experts and frontline users with regard to their perceptions and usage preferences of SoMe. Experts were more likely to value the education of clinicians on more diverse SoMe platforms. In addition, there were also differences in perceptions regarding the role of SoMe in academia, with experts more likely to recommend using SoMe to foster communities of practice, disseminate research, and promote engagement for knowledge translation compared to frontline users. Importantly, these results from our study lay the foundations for a SoMe curriculum that emphasizes these components of community building and knowledge translation.

Interestingly, expert and frontline users differed in their perceptions of the competencies that define SoMe. Frontline users were more likely to believe that mobile quizzing was a basic competency, whereas expert users were more likely to believe that disseminating research by microblogging (via Tweets or Facebook) should be a basic competency. These differences among expectations for expert and frontline users regarding the essential components of a SoMe curriculum may be due to differences in values, comfort levels, or the areas each group most desires to improve upon. However, regardless of the differences identified, our results obtained through this study should

inform the development of core competencies of future SoMe curricula.

More of our experts believed that SoMe should have a role in professional advancement and the fostering of virtual communities of practice, and there was agreement among both expert and frontline users that SoMe can help facilitate online academic discussions. These results are consistent with a prior study (28). Learners should be empowered to know that that SoMe dissemination of articles was correlated with increased numbers of subsequent citations, which is a surrogate measure of article impact (29–31). The concept of a digital portfolio of curated online content to be used for professional advancement is an evolving concept (9). Consensus on what constitutes social media-based scholarship (25), as well as guidelines on the use of digital scholarship in academic promotion have been recently published (32).

Both groups we surveyed believed that e-professionalism should be a component of any SoMe curriculum. An often touted reason for avoiding SoMe is a concern regarding professionalism and medicolegal risk, given their potential permanence and reach (17,33–35). Consensus statements on physician professional use of social media (36,37) and ethical guidelines (8,38,39) have been published. As demonstrated by the interest in e-professionalism found in our study, a formal SoMe curriculum addressing e-professionalism as a basic competency may help address these concerns by better informing clinicians on how to engage in a professional and ethical manner on SoMe.

Finally, the role of SoMe in the establishment of virtual communities has been demonstrated in various specialties, including medical education #MedEd (30), nephrology with #AskRenal, #NephJC, #NephMadness (40–44), global surgery #globalsurgery (45), cardiothoracic

surgery #TSSMN (46), and many more. SoMe has also been impactful in the creation of virtual academic communities through SoMe campaigns that united individuals through common passions and issues, such as the #ILookLikeASurgeon (47) and #HeForShe campaigns (48). Beyond raising awareness for women in surgery, for example, these SoMe campaigns also helped forge connections and networks that educated and supported individuals around the world who would otherwise not have met (49,50). The mere existence of our research collaborative and study is thanks to a virtual community created to participate in survey-based studies around medical education research (21).

## **CONCLUSIONS**

There are few differences between the SoMe curricular expectations of expert vs. frontline users. These results should inform the creation of resources for teaching clinicians and researchers how to effectively use SoMe. The results of this study can inform future research to develop a curriculum on SoMe. Knowledge, skills, and attitudes toward SoMe could be used as a reference for those who would like to study SoMe for the health professions as well as other disciplines. For instance, the items can be used for a scale development study.

## ***Limitations***

The results of our study should be interpreted with consideration of several limitations. Importantly, as the recruitment of participants for our study was conducted on social media and email, respondents represent a subpopulation of individuals who already utilize web-based technologies. This aspect limits the generalizability of our results to populations of healthcare professionals that do not use SoMe. However, we feel our sampling strategies were intentional and appropriate, both because some knowledge of social media was required to provide a perspective on the questions that were

asked and because frontline social media users (as opposed to those who do not use SoMe) are our population of interest.

While we made efforts to stratify participants into groups of experts and frontline users, these groups are heterogeneous. It is possible that there may exist within group differences, for example among those that teach SoMe workshops, run SoMe handles, or have published on topics related to SoMe, that have different perspectives or expectations on a SoMe curriculum. This heterogeneity could have minimized discrepancies between and within the two groups.

Finally, we noted that there was a paucity of students. We wonder if this has to do with whether students would see themselves as having a place in helping to provide feedback about curricular design. This finding may also be reflective of our METRIQ study listserv consisting mainly of more senior trainees (e.g., residents and fellows), but also may reflect that the bulk of our social media recruitment occurred on Twitter, a social media platform with a relatively older demographic. Recruitment on other more student-oriented outlets (e.g., Reddit, Instagram, TikTok) may have helped us to recruit more of a representative sample of student-users.

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## ***Conflict of Interest***

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