Urology Reach on Social Media: Appealing to Future Potential Applicants

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Abstract

Objective   On average, internet users aged 16 to 29 years spend 3 hours per day on social media platforms. Previous research has identified social media as an important tool for prospective applicants in the age of virtual residency interviews, but no study to date has included TikTok as a social media platform of interest. TikTok is the fastest-growing social network in the United States, and there were predictions it would reach 1.8 billion users by the end of 2022. This study seeks to understand the difference in reach of Facebook, Instagram, Twitter, and TikTok to inform medical student engagement efforts.

Methods   A binary (Yes/No) poll was posted on MCG Urology accounts on Facebook, Twitter, Instagram, and TikTok. The poll asked the question "Are you a medical student?" and was open for viewing and/or response on each platform for 24 hours. The number of total views and the number and percentage of respondents were recorded for each application. Engagement was determined by the percentage of viewers who responded to the poll.

Results   A total of 3038 views and 839 responses were collected from all social media platforms. TikTok had the highest number of views (1838) and responses (617) but low engagement (33.56%). The highest percentage of "Yes" responses was on Twitter (61%); however, Twitter had the lowest engagement of 7.2%. Results of a chi-square test showed that while the total raw number of medical students reached was highest on TikTok, of all those who engaged with the poll, there were statistically significantly more medical students on Twitter ($P < 0.0001$).

Conclusions   Medical student outreach can be successfully conducted through social media. Twitter allows for engagement with a statistically significantly larger proportion of medical students, and TikTok allows access to a grossly larger audience of medical students. Urology residency programs should consider the utility of both Twitter and TikTok for student outreach.

Introduction

On average, internet users aged 16 to 29 years spend 3 hours per day on social media platforms. In the age of virtual interviews, many students have resorted to using social media to engage with residency programs, and in turn, programs have utilized social media as a recruiting tool. A study of general surgery applicants from the 2020–2021 cycle found that the majority of applicants utilized social media to inform and educate themselves about the programs they applied to[1]. In response to increased student engagement on social media, the number of general surgery residency social media accounts and usage of these accounts significantly increased in 2020, following the COVID-19 pandemic[2,3]. Similar trends were identified for orthopedic surgery, plastic surgery, otolaryngology, and integrated vascular surgery matches[4–7].

Competing Interests

None declared.

A study of urology applicants from the 2021 application cycle found that students applying to urology residency increasingly utilized Twitter during the COVID-19 pandemic. They also found that students who matched in urology were more likely to have a Twitter account[8]. Additionally, another study on the use of social media in the urology residency match found that the majority of applicants had an Instagram account[9]. While Heard et al. found that there was no relationship between the presence of applicants on social media and their urology match outcomes[10], a majority of applicants and program directors believed that social media use aided them in some way in the 2021 urology match process.

Aside from the match, urology is one of the leading specialties that has utilized social media such as Twitter, Instagram, Facebook, and now TikTok as an opportunity for education of patients, students, and physicians. An analysis of urology residency program presence on social media found that 86% of urology residency programs have a Twitter account, 39% have an Instagram account, and 34% have a Facebook account[11].

A study published in association with the European Association of Urology Guidelines Office Dissemination Committee analyzed the usage of hashtags and found that hashtags are a valuable tool in the urologic community for education and communication via social media content[12]. Hashtags are topic indicators that facilitate content organization using a hash symbol (#) followed by a key word or phrase. If one searches for a particular hashtag on a social medial platform, only the content that contains that key word or phrase will populate. Different social media platforms have variable user interfaces and utilize different algorithms to show users content on the application or website. However, across the four major platforms examined in this study, content creators may associate their posts with captions and/or hashtags, and new posts are algorithmically directed to users who have demonstrated interest in similar content.

The Facebook and Instagram algorithms work similarly to display content on the platform in which posts from followed accounts are arranged in a non-chronological order on the main "home" page. The Twitter algorithm displays posts chronologically and includes original posts and retweets from followed accounts as well as occasional posts labeled as "based on your likes." These posts are identified via key word similarities and hashtags, #UroSoMe, for example.

The TikTok algorithm is constructed differently, as it primarily curates videos for users based on a combination of demonstrated interests through viewed and searched hashtags, likes, and comments. For example, a first-time user will open the application and see a random assortment of videos; however, based on the user's engagement with videos, machine learning is able to identify user interests and present similar content on their "For You" page, which is the default interface on the application.

TikTok is the fastest-growing social network in the United States, having grown more than 900% since January 2018, when the application had approximately 11 million monthly active users, to more than 100 million American monthly active users in August 2020, and predictions that it would reach 1.8 billion users by the end of 2022. Of these 100 million monthly active users, 50 million are on the app every day, 41% of whom are between 16 and 24 years of age. The current landscape of literature about TikTok is primarily focused on content quality analysis. To our knowledge, no previous study has examined TikTok as a potential social medial platform for student outreach.

Materials and Methods

A binary (Yes/No) poll was posted on MCG Urology accounts on Facebook, Twitter, Instagram, and TikTok. The native software on each of the platforms was utilized to conduct each poll. The poll asked the question "Are you a medical student?" and was open for viewing and/or response on each platform for 24 hours on July 23, 2021. A 24-hour polling period was conducted to account for constraints of the native software across platforms, with Instagram, Facebook, and Twitter only allowing for a 24-hour polling period during which a respondent can respond only once. The specific date was chosen arbitrarily, as there was no difference in follower activity between dates according to account analytics.

The number of total views and the number and percentage of respondents were recorded for each application using the native analytics features on each of the platforms. At the time of the poll, the MCG Urology Twitter account had 4.8K followers, Instagram had 1.6K followers, Facebook had 1.5K followers, and TikTok had 48K followers. The difference in number of followers across platforms was accounted for by measuring engagement. Engagement was determined by the percentage of those who viewed the poll who responded either "Yes" or "No." Statistical analysis was conducted using SPSS software. The proportion of medical students' "Yes" responses were compared across social media platforms using the chi-square test ($P < 0.01$).

Demographic and geographic data of poll viewers were collected on TikTok only, as this was the only platform to release this data. Demographic and geographic data of poll respondents could not be collected due to constraints of the social medial platforms.

Results

A total of 3038 views and 839 responses were collected from Facebook, Twitter, Instagram, and TikTok in the

24-hour period during which the poll was open for viewing and response on each platform.

Facebook and Instagram had the highest engagement compared to Twitter and TikTok, with 45.5% and 55.4%, respectively. The poll on Facebook had 156 total views and 71 total responses, representing 45.5% engagement with the poll (**Figure 1**). Instagram had a similar breakdown to Facebook, with a total of 157 views and 87 total responses, representing 55.4 % engagement (**Figure 1**). While the poll on Twitter had the highest percentage of medical students at 61% (39), it also had the lowest engagement of 7.2%, representing 64 total votes of 887 views (**Figure 1**). TikTok had the highest number of views (1838) and responses (617), with 35.98% engagement.

On Facebook, 53.52% of respondents (38) indicated that they were medical students (**Figure 2**). Of those who responded to the poll on Instagram, 54.02% (47) indicated that they were medical students (**Figure 2**). TikTok had lowest percentage of those who indicated that they were medical students, at 36%; however, although the proportion of those who responded "Yes" to the poll on TikTok was the smallest, TikTok had the largest total number of medical students reached, at 222 students (**Figure 2**).

Chi-square test results showed that while the total raw number of medical students reached was highest on TikTok, of all those who engaged with the poll, there were statistically significantly more medical students on Twitter ($P < 0.0001$) (**Table 1**).

Demographic and geographic data collected on TikTok showed that the majority of poll viewers, regardless of engagement or response, were 25 to 35 years old (**Figure 3**), equally likely to be male (50%) or female (50%), and from the United States (63%).

Discussion

While Twitter has traditionally been used for medical student outreach, it had the lowest engagement and the lowest total medical students reached, though of all the students who engaged with the poll, there were statistically significantly more medical students on Twitter compared to other social media platforms ($P < 0.0001$) (**Table 1**). Conversely, TikTok, which has been the least utilized social media platform by academic urology programs for outreach, had the smallest percentage of medical students respond, but it reached the largest total number of medical students compared to other social media platforms.

The differences in the results can be explained by the different algorithms of the platforms, as Instagram, Twitter, and Facebook have home pages that primarily show users posts from accounts that they have already
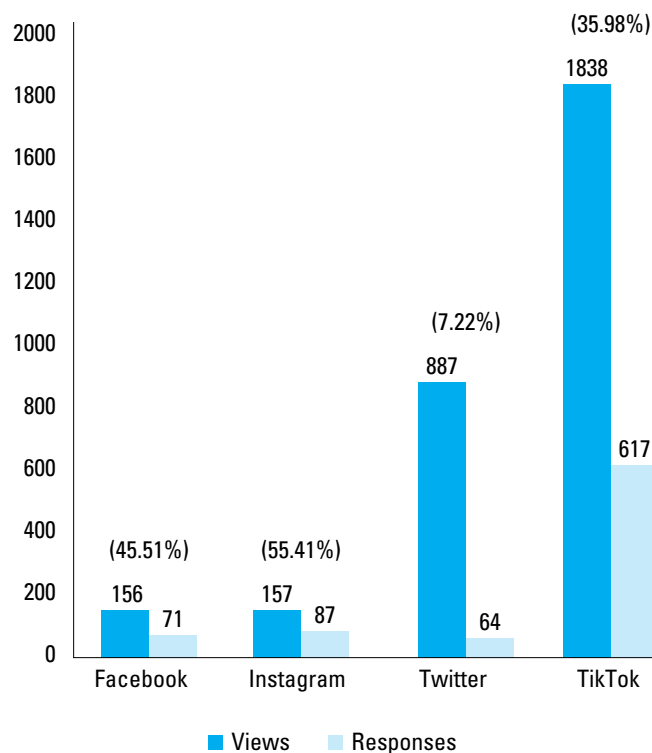
FIGURE 1.

Poll total views and responses (engagement)
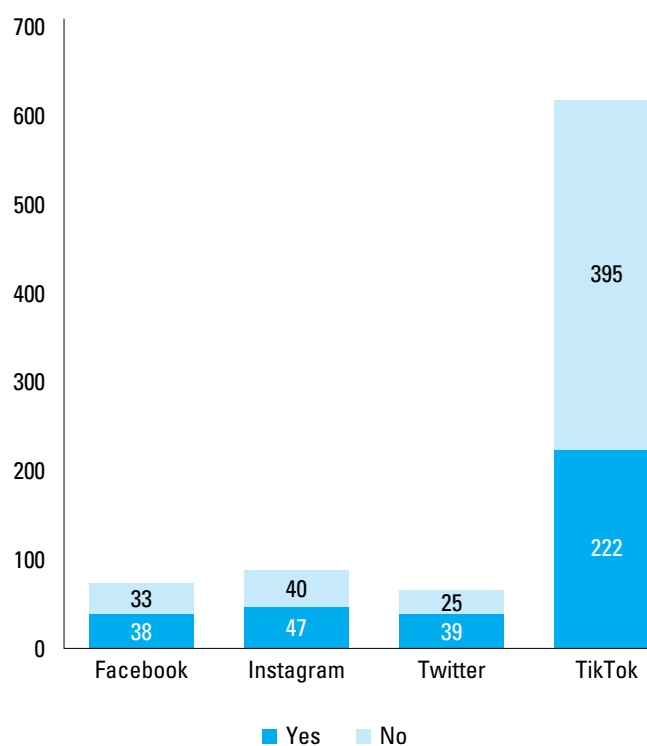

FIGURE 2.

"Are you a medical student?" Yes/No responses

TABLE 1.

Results of chi-square analysis

CV Outcome	Yes	No	Row Totals
Facebook	38 (29.28) [2.60]	33 (41.72) [1.82]	71
Instagram	47 (35.88) [3.45]	40 (51.12) [2.42]	87
Twitter	39 (26.39) [6.02]	25 (37.61) [4.23]	64
TikTok	222 (254.45) [4.14]	395 (362.55) [2.90]	617
Column Totals	364	493	839 (Grand Total)

FIGURE 3.

Age distribution of viewers on TikTok

■ 18-24 ■ 25-34 ■ 35-44 ■ 45-54 ■ 55 and up
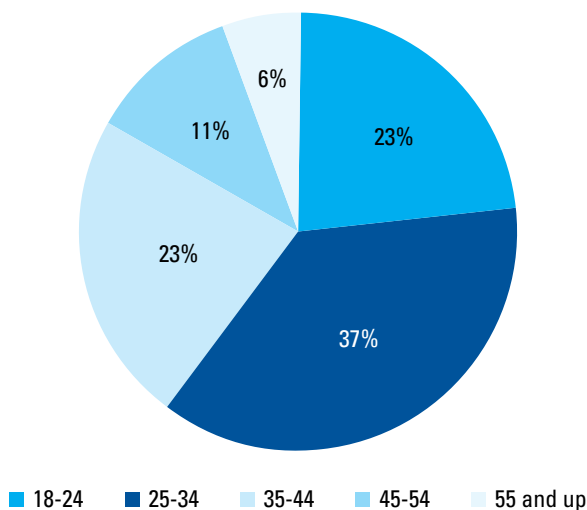
followed. TikTok, however, uniquely directs users to the "For You" page that includes content from accounts that users may or may not follow but that are algorithmically tailored to their interests, according to their likes, comments, and searches. While most social media platforms do use machine learning to tailor content to users based on previously demonstrated interests, TikTok does so on its main user interface and to a greater extent.

Twitter and TikTok are both perhaps better able to tailor content to users based on hashtags. Hashtags used as topic indicators on TikTok and Twitter are able to demonstrate content to specific groups of users such as medical students. The more a user interacts with posts that contain a certain hashtag, the more they will see other posts that contain that hashtag or content that is similar. However, the audience reached on TikTok was larger than that on Twitter. The fact that the TikTok main user interface focuses on all accounts rather than those accounts that users have deliberately followed may have contributed to the larger audience reached on TikTok. In contrast, the home page on Twitter is less utilized to show users novel content and is more focused on accounts that users have followed. This could be the reason that those who engaged with the poll on Twitter were statistically significantly more likely to be medical students, as studies have shown that Twitter is the primary social media platform used by residency applicants during the match[8].

Our study did have some important limitations. Due to the nature of the degree of anonymity of users on social media, there was no ability to verify the accuracy of the responses or to run the poll for longer than 24 hours while ensuring only one response per person per poll. Additionally, while the breakdown of followers of MCG Urology accounts is similar to other institutions on Facebook, Instagram, and Twitter, the MCG Urology TikTok account has a significantly larger following on TikTok compared to the other social media platforms, and this may have contributed to the increased reach on TikTok. However, as there are so few urology residency programs on TikTok, it is difficult to assess as to whether the large number of followers on TikTok would be unique to MCG Urology. Perhaps there is a large audience on TikTok that could be reached by other programs. Further research is necessary to determine the practical utility of TikTok for medical student outreach.

Conclusion

Although urologists are in high demand across the country, too many medical students are exposed to the field later than many other specialties due to lack of early curricular exposure[13]. Social media may be an important remedy for this. An undecided medical student with accounts on each platform may follow a few academically focused accounts on Twitter, Facebook, and Instagram, but their home page will primarily consist of tweets from accounts they follow or tweets that were liked, retweeted, or replied to by accounts that they already follow. However, on TikTok, if the student liked a TikTok from an account that had some connection to urology, they will be more likely to see content from a program that may not have noticed.

Additionally, previous research has consistently shown that social media is an invaluable asset in the residency application process for urology as well as other surgical specialties. While our analysis was consistent

with previous research that has shown that Twitter has been the mainstay of social media engagement for residency recruitment, TikTok may be an emerging player in student outreach efforts. Twitter and TikTok both have utility for medical student outreach: Twitter allows for engagement with a statistically significantly larger proportion of medical students and TikTok allows access to a grossly larger audience of medical students. Instagram and Facebook may be falling out of favor by medical students for engagement with urology programs. With increasingly younger students entering medical education, urology residency programs should consider the utility of both Twitter and TikTok for student outreach.

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