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# Evaluating the effect of the COVID-19 pandemic on the use and impact of social media in the urology residency match: A review of the literature

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Social media (SoMe) use within healthcare has changed significantly since the start of the COVID-19 pandemic. This project highlights recent changes in SoMe use within the field of urology and summarizes how they have impacted the urology residency application and match process. A literature review of the PubMed, Embase, Cochrane, Scopus, PsycINFO, and Web of Science databases was performed on March 19th, 2022 for relevant studies regarding the use of SoMe in the American urology residency application and match process. Articles not published in English, published prior to 2019, or focusing on residency matches outside of the United States were excluded. The initial search yielded 202 unique results, of which, after independent review, a total of nine texts were deemed appropriate for analysis. Of the nine sources, six were peer-reviewed articles, two were published conference abstracts which included data, and one was a research letter. These studies consistently found that both urology applicants and residency programs increased their SoMe use following the start of the COVID-19 pandemic as the percentage of programs (26-50% to 51-75%) and percentage of applicants (44% to 80%) participating in SoMe for professional purposes increased from 2018-2019 to 2021. Notably, Twitter was the most popular SoMe platform used. Among urology applicants, 43-61% found SoMe to have the greatest utility in providing information about specific programs. There was also consistency between studies in finding that SoMe use played a minimal role in whether or not a student matched, as only 3-6% of program directors reviewed applicants' SoMe during the application and match process, while as many as 80% reported that SoMe had no role in the assessment of applicants. With programs continuing to see SoMe as a method of reaching out to applicants, increases in usage will likely continue even after the COVID-19 pandemic ends. In turn, it will become

increasingly important for students to be mindful of how and what they post on SoMe. Continuing to analyze and reevaluate the benefits and drawbacks of these SoMe tools will remain important as virtual interactions become increasingly relevant to the field of urology.

#### KEYWORDS

urology residency match, social media, Twitter, COVID-19 pandemic, medical student, program director, Instagram

## 1 Introduction

As social media (SoMe) use has become increasingly integrated into society, it is unsurprising that the use of SoMe in medicine, as well as urology, is on the rise. Notably, there was a ~35,000% increase in Tweets referencing the annual American Urological Association (AUA) conference in 2013 compared to 2011. This was followed by another 250% increase from 2013 to 2015 (1). On an individual basis, an email survey in 2017 conducted by the AUA found that 74% of respondents admitted to having a SoMe presence in some capacity (2). With its continual rise, SoMe provides opportunities for sharing research, education, networking, mentoring, and aiding communication (3–5).

In recent years, the opportunities offered by SoMe were vital during the COVID-19 pandemic when a significant portion of medical education shifted to a virtual environment (6). This transition online led to the creation of new opportunities for medical students such as the development of virtual events hosted by urology organizations and residencies (5). These new ways to connect online have led to a significant increase in SoMe use among urology applicants and residency programs (7).

The onset of the COVID-19 pandemic led to meaningful and rapid changes in many areas of the residency application process. Residency interviews moved to a virtual format, opportunities for away rotations were limited or only offered virtually, and networking became more difficult with fewer in person events and conferences. Concurrently, publications documented an increased participation in SoMe use among urology residency applicants and residency program directors (8, 9). This paper comprehensively reviews the literature on recent changes in the frequency, content shared through, and purpose of SoMe use among medical students applying into urology, urology residency programs, and program directors since the start of the COVID-19 pandemic. It further aims to summarize the benefits and drawbacks of these changes, as well as their impact on the urology application and match process.

## 2 Methods

A search of six databases—PubMed, Embase, Cochrane, Scopus, PsycINFO, and Web of Science—was performed on March 19<sup>th</sup>, 2022. Each database was searched using the following search strategy: Urology AND (Residency OR Resident OR Match OR Applicant OR Application OR Medical Student) AND (Social Media OR Twitter OR LinkedIn OR Facebook OR Instagram). The initial search results were screened for duplicates, leaving 202 individual papers, conference abstracts, and research letters. The articles and abstracts were first screened individually by all four reviewers using the Rayyan platform, a web-based systematic review tool which allows researchers to review, organize, and label sources both independently and as a group (Rayyan QCRI, RRID : SCR\_017584). During this initial screening, each reviewer independently determined whether the studies met the inclusion criteria of being relevant to the AUA Residency Match and including information on the use of SoMe in the urology application and match process. The reviewers subsequently discussed each study as a group, and any entries determined to meet the inclusion criteria by three or more reviewers underwent full text review. Full text articles not published in English, published prior to 2019, or focusing on residency matches outside of the United States were excluded. Papers selected for inclusion were read by all four reviewers, who collected data that evaluated changes in social media usage by those applying to urology residency or physicians who are involved with urology residency programs. This data was organized in an online document shared between the authors.

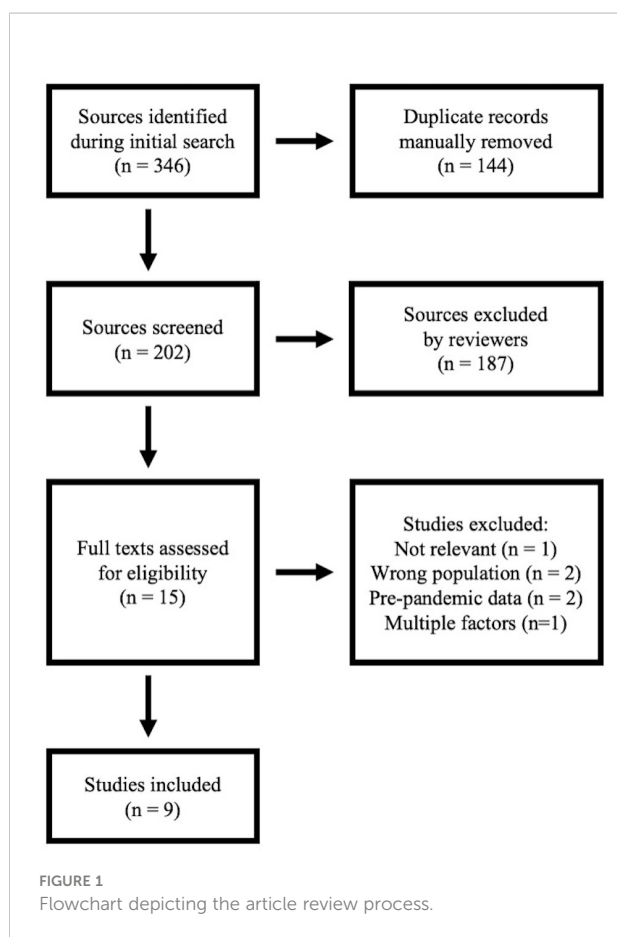
In total, 15 entries met the criteria for full text review, and each was independently evaluated by each of the four reviewers. Subsequently, six entries were unanimously determined to not meet the inclusion criteria. Two were excluded for not containing data on urology applicants, one for not being relevant to SoMe use, two for only containing data collected prior to the start of the COVID-19 pandemic, and one for having a combination of the above. As such, a total of nine sources were

included in the final analysis. During full text review, reviewers extracted the key findings of each entry, focusing on trends in SoMe use, how SoMe was used, and reported benefits and drawbacks of SoMe use as part of the residency application process. When there was a lack of consensus on extraction of specific data, a majority vote was required for inclusion of said material.

## 3 Results

### 3.1 Summary of literature search results

Nine sources were included in the qualitative analysis of SoMe changes during the COVID-19 pandemic and their effect on the AUA Residency Match process. These sources included six peer-reviewed articles, two published conference abstracts, and one research letter. All of the studies were descriptive, with over half being survey studies. Survey response rates in these studies ranged from 20-50%. The process of reviewing and selecting articles is depicted in [Figure 1](#). The methodology from the included studies is included in [Table 1](#) and a summary of the main findings are included in [Table 2](#).



### 3.2 Trends in social media use among residency programs

Prior to the start of the COVID-19 pandemic, there was an increasing presence of urology residency programs on SoMe. In 2017, 30% of residency programs had an account on Twitter (16). By 2019, this number had grown to 59%, including 50-53% utilizing Twitter and 28% utilizing Facebook (8, 9). This upward trend continued during the COVID-19 pandemic as one survey found that 79% of program directors reported using Twitter (13). It is also worth noting, that there has been a steady climb in the percent of urology faculty utilizing Twitter, as these faculty members are likely to be involved in the residency interview process (8). This finding was echoed by a survey which found a significant increase in the median number of programs participating in SoMe going from 26-50% in 2018-2019 to 51-75% in 2021 (7). A study looking at trends in Twitter use among urology programs found that twenty-three new urology program Twitter accounts were created in 2020, the largest increase since 2009. This same study found an increase in the average number of Tweets from program accounts in 2020. From 2009-2018, the average number of Tweets per account was 69. This number jumped to 544 per account in 2020 (14).

### 3.3 Trends in social media use among residency applicants

In terms of applicants, use of SoMe for professional purposes increased from 44% in 2018-2019 to 80% in 2021 (6). Specifically, 82% of applicants in 2021 viewed some form of SoMe daily, while less than 25% reported posting more than once per week (11, 13). Notably, the highest percentage of applicants reported posting between monthly and yearly (11). Over 74% of applicants in 2021 reported increasing their SoMe use as a result of application changes due to the ongoing pandemic (7). This increase in SoMe usage was particularly high on Twitter. One study found that prior to the COVID-19 pandemic, 24% of applicants in 2021 had created a Twitter account. This number increased to over 50% by Match Day 2021 (12). Another study found that half of applicants from 2018 and 2019 reported not having a Twitter account, while 45% of applicants in 2021 reported daily use of Twitter for professional purposes, with a total of 75-80% using it for activities related to the urology application and match process in general (7, 11, 13). Forty-nine percent of applicants in 2021 with a Twitter account acknowledged creating it specifically for the residency application process (11). In total, 93% of responding applicants reported using Twitter in the 2021 match process (13). Of note, the increased professional presence of urology applicants on SoMe during the COVID-19 pandemic appears limited to Twitter. One study showed that

TABLE 1 Overview of included studies.

Reference	Study Design	Respondents	Methods
Ahmed (2021) (10)	Survey	64/130	Structured survey of urology program directors
Carpinito (2022) (11)	Survey	144/398	Structured survey of applicants and their social media use in the 2021 Urology Match process
Ernst (2021) (5)	Descriptive study	N/A	Survey of medical students who participated in a urology mentorship program started during the COVID 19 pandemic
Friedman (2022) (12)	Cross Sectional Study and Survey	N/A	Analysis of Twitter metric data of applicants in the Urology Match Structured survey and phone interviews of applicants and urology faculty from different institutions
Heard (2022) (13)	Survey	108/528	Structured survey of urology applicants and program directors about social media use during the 2021 match process
Ho (2021) (7)	Survey	162/496	Structured survey of Urology Match applicants about their social media use
Johnston (2019) (9)	Cross Sectional Study	N/A	Cross sectional analysis of social media activity of urology residency programs
Manning (2021) (14)	Cross Sectional Study	N/A	Analysis of twitter use and the associated twitter content by urology residency programs on Twitter
Siegal (2021) (15)	Survey	N/A	Structured survey of urology applicants, program directors, and coordinators from the 2019-20 match cycle

N/A, Not Available.

TABLE 2 Summary of main findings from included studies.

Reference	Summary
Ahmed (2021)	-Less than 5% of program directors considered SoMe “very important” factors when considering which applicants to interview
Carpinito (2022)	-79% of applicants used Twitter during the residency application cycle, with 49% reporting they made their account during the application cycle. -Only 7% of applicants reported that they posted on Twitter more than once per week -Applicants who used Twitter or Instagram did not have a significantly higher likelihood of matching higher on their rank list and did not have a significantly greater number of interview invitations than those who did not use these social media -Among the different SoMe site, Twitter was found to be the most influential for applicants when they were making their rank list -Twitter was the SoMe site that most applicants reported using to learn about virtual residency events -84% of applicants found Twitter to be a useful source of information during the application cycle
Ernst (2021)	-Described an online mentorship program for medical students interested in Urology that utilized Twitter for educational purposes. 111 Students participated with the program and the main goal was to provide mentorship in the residency application process.
Friedman (2022)	-Found that nearly double the proportion of applicants who matched were utilizing Twitter by Match day compared to those who did not match -The number of applicants with a Twitter account doubled from prior to the start of the COVID-19 pandemic compared to Match day 2021. -26% of applicants used Twitter during the 2021 Match cycle as an avenue to network with residents and faculty -64% of applicants who utilized Twitter planned to continue using it during residency
Heard (2022)	-66% of applicants followed the program they matched at on Twitter, while only 19% of applicants were followed by the program that they matched at prior to match day. -5% of program directors reported that social media was a part of their assessment of applicants, while 80% reported social media was not involved -15% of programs directors reported that social media helped an applicant’s chances of matching while 12% reported that social media hurt some applicants’ chances. -61% percent of program directors reported that social media played a more significant role in the match process due to COVID-19 -38% of applicants felt social media was beneficial in the match process, while 61% of program directors felt it was beneficial. -39% of applicants reported that program social media activity increased their interest in the program.
Ho (2021)	- Significant increase in professional SoMe use in the 2021 applicants (80%) compared with the 2018/2019 applicants (44%) - In 2021 compared to 2018/2019, more applicants used SoMe to connect directly with residents (69% vs 34%) and with faculty members (65% vs 15%) - Applicants in 2021 compared to 2018/2019 more often found SoMe to be useful for making decisions about applying to (33% vs 10%), interviewing at (26% vs 7%), and ranking programs (20% vs 9%) - Twitter was the most common platform for applicants to access program information, increasing from 38% to 71%
Johnston (2019)	- 59% of accredited urology programs had at least one SoMe account - 53% of programs had a Twitter account, while 28% had a Facebook account
Manning (2021)	-Number of tweets from these accounts increased (from 62 in 2009 to 18,397 in 2019 and 22 544 in 2020) -Trigram (three-word combination) analysis for 2020 revealed a shift from a primary focus on oncology (“risk, prostate, cancer” and “cancer, awareness, month”) to recruitment and education (“virtual, open, house” and “urology, grand, rounds”) in 2020
Siegal (2021)	-Regarding social media, 35% of applicants believed programs review theirs before extending an interview, but only 6% of programs admitted to doing so

there was no significant difference in Instagram and Facebook utilization for professional purposes within this time period (7). Specifically, over 70% of applicants reported having an Instagram, but only 3% reported using it for purposes related to the urology application cycle (11).

### 3.4 Utilization of social media by residency applicants and programs

There was a wide spectrum in how residency applicants utilized SoMe. One of the most commonly reported purposes of using SoMe was to network outside of one's home institution. Compared with 2018, there was a significant increase in the number of applicants in 2021 using SoMe to connect with urology residents (69% vs 34%), faculty (65% vs 15%), and residency program directors (37% vs 4%) (7). The COVID-19 pandemic also resulted in the creation of a Twitter based mentorship program between urology residents and urology applicants called #Urostream101 which paired urology residents with medical students interested in applying to urology residency. The students who participated found this helpful, giving the program an average satisfaction rating of 6.1 out of 7.3 Other reported uses of SoMe included posting original content including links to manuscripts and "tweetorials" (5).

Beyond forming connections and identifying mentors, many applicants in 2021 utilized SoMe as a way to collect information about programs. Surveys found that between 43-61% of applicants felt SoMe had become a more important source of information due to COVID-19 related changes to the application cycle. One of the surveys showed an increase from 9% of applicants who felt this way in 2018 and 2019 to 43% in 2020. Specifically, surveyed applicants reported utilizing SoMe to gather program specific information and learn about online program events. SoMe was also useful in helping applicants determine where to apply and interview, and ultimately decide where to rank programs on their rank lists (7, 11). Applicants in 2021 found Twitter to be the platform most useful for gathering information about programs, and with the most influence on their interest and personal ranking of specific programs. Interestingly, while 13% of applicants also agreed that Instagram was useful for gathering program information, 70% felt that the site was not effective for this purpose (11).

The COVID-19 pandemic also appears to have influenced how Twitter is used by urology programs with programs shifting their focus from tweeting medical content to sharing information revolving around virtual opportunities for medical students. A recent "Trigram", or analysis of three-word combinations within Tweets, revealed that "risk, prostate, cancer" was the most common combination of terms Tweeted together by residency program accounts prior to 2020. After 2020, "virtual, open, house" was the most popular trio of words

used together, indicating an emphasis on posts related to the residency match (14).

### 3.5 Influence of social media on residency applicants

As recent studies have shown, SoMe has been increasingly utilized by urology applicants since the beginning of the COVID-19 pandemic. How these changes influenced applicants' perceptions of programs has also been a topic of recent research. One survey found that 38% of applicants felt SoMe provided benefits to the match process, and 39% reported that SoMe increased their interest in specific programs (13). Another study of applicants in 2021 found similar results, as 36% agreed that official program Twitter pages, as well as Twitter accounts of residents, fellows, or faculty members at specific programs influenced their interest in specific residencies. However, this trend was found to be applicant dependent, as 37% of applicants in this same study reported these factors had no influence on their interest in programs (11). There was also a survey that included 19 matched applicants from the 2020 application cycle which reported that 76% felt virtual opportunities impacted their evaluation of programs. Furthermore, they found that the impact SoMe had on applicant opinions of programs was dependent on the extent of SoMe use by each applicant, as it identified a positive association between increased applicant SoMe use and greater perceived insight into programs (13).

This association, however, was limited to certain SoMe platforms. While over 70% of applicants reported that Instagram accounts had no influence on their interest, a significantly higher number of applicants felt Twitter was more influential than Instagram. These perceptions of how useful SoMe is in the match process also differ between applicants and program directors. A higher percentage of program directors than residency applicants felt SoMe was beneficial in the match process, while a higher percent of applicants believed SoMe provided insight into residency programs (13).

### 3.6 Influence of social media on the urology match process

One of the most pressing questions regarding SoMe use by urology applicants is whether it has an influence on the match process. With respect to Twitter, 66% of applicants in 2021 reported following the program where they matched, and 19% reported being followed by the program where they matched (13). Fifty-nine percent of matched students reported they had a Twitter account compared to only 28% of unmatched students

(12). Twenty-six percent of applicants reported interacting with the program where they matched on Twitter (13). Also, 35% of applicants felt that programs reviewed their SoMe when considering who to interview for the application process. Although a strongly held belief among applicants, one study on the 2021 match found that only 3% of program directors agreed that they assessed an applicant's SoMe in the match process (13). This finding was supported by two other studies (10, 15). The first found that program directors considered SoMe to be one of the least important factors in selecting applicants for interviews (15). The other study found that only 6% of program directors reviewed an applicant's SoMe before offering an interview (10). Furthermore, greater than 80% of program directors reported that SoMe played no role in assessment of applicants (10, 13). Even though only a small proportion of program directors acknowledged SoMe was considered in the application process, one survey found that 15% of program directors reported SoMe was beneficial to an applicant's chances of matching and 12% reported that SoMe hurt an applicant's chances (13).

Even with the growing use of SoMe among applicants and program directors, multiple studies that surveyed applicants and program directors indicated that Twitter use did not influence a candidate's ability to match, the rate at which they received interview offers, and where they matched on their rank list (11, 13). Instagram use also did not significantly alter an applicant's likelihood of matching (11). Surveyed applicants who connected with faculty or residents on Twitter or Instagram were also no more likely to match near the top of their rank list compared to applicants who did not engage in this behavior (11). One study did find that students who matched had an average higher number of followers and were more likely to include specific information in their Twitter profile such as indications of their interest in urology, their medical school, and their graduating class. Of note, applicants who included flags of origin that were not the United States flag had lower match rates than their counterparts. This study also found that matched applicants on Twitter were more likely to have shared information about the field of urology (12).

### 3.7 Positive and negative aspects of social media use

The increased use of SoMe in recent years, particularly following the start of the COVID-19 pandemic has led to many noted benefits, but also some negative experiences and new concerns. As noted previously, nearly a third of applicants felt SoMe enabled them to have greater exposure to programs (7). Posts highlighting resident lifestyle, event announcements, networking opportunities, and research opportunities were beneficial as well (7, 11, 12). Only a small percentage of applicants in 2021 felt SoMe decreased their interest in

programs (7, 13). Some particular activities by programs noted to have negative perceptions among applicants included posting pictures of applicants without their consent and posting at a high frequency, but it is worth noting less than 20% of surveyed applicants acknowledged these as negative (7). Feeling increased pressure to use SoMe as a urologist was the most common negative experience noted by applicants, as nearly three quarters reported sharing this outlook (13). Additionally, over half of applicants acknowledged that they felt overshadowed by other applicants on SoMe (7).

Along with these positive and negative experiences, the expansion of SoMe into the urology application process has raised new concerns. These include communications between programs and applicants during the match process, the use of SoMe accounts for non-professional or personal content, use of SoMe as a factor in the ranking of applicants, and SoMe use disorder (7, 12, 13). Currently, the Society of Academic Urologists restrict verbal and written communication between applicants and programs following their interview, but communication on SoMe may not fit into either category, creating a gray area (13). Further concerns about which content should be shared on SoMe have also been noted by applicants, as over 60% did not feel comfortable posting about politics, race, and diversity issues (12). It is worth noting that most program directors surveyed favored applicants using their SoMe accounts for personal and professional content, though some did report that they preferred only professional content (13). Increased SoMe use by future urologists itself is not without concern, as a recent study reported 11% of urology residents have SoMe use disorder (13, 17).

Overall, applicants in 2021 were split on the use of SoMe going forward. Nearly 40% preferred fewer interactions with programs through SoMe, while nearly 40% felt the current level of interaction was adequate, and over 20% desired more online interactions on SoMe (7). Even with this split in opinions, over two-thirds of applicants planned to continue their use of SoMe while in residency (12).

## 4 Discussion

There were several important commonalities between the studies included in this review. First, it was clear that Twitter was viewed as the most influential SoMe platform among urology applicants. Instagram and Facebook were consistently found to have little impact on these applicants' interest in programs, and were not found to be useful sources of information about programs (7, 11). This notable difference in the impact of SoMe platforms can help guide the way program directors use SoMe so that they are able to reach the greatest number of urology applicants. Second, it is clear that SoMe use amongst urology applicants and program directors, particularly Twitter, increased significantly as a result of the COVID-19 pandemic.

With the uncertainty surrounding new COVID-19 variants, and the AAMC advising that residency interviews remain virtual for 2022, it will be important to observe whether this trend continues (18).

Another theme shared by the studies was that program directors did not consider SoMe to be an important aspect of evaluating applicants (10, 13, 15). This contrasts current applicant beliefs, as over 30% felt that program directors were evaluating their SoMe use during the application cycle (15). Notably, although a large percentage of program directors did not consider SoMe in the match process, between 12-15% acknowledged that SoMe use and content had a negative or positive role in the evaluation process (13). The realities of how much program directors weigh SoMe in deciding whether to offer an applicant an interview is important for medical students to understand as they decide how much time to devote to activity on SoMe. Moreover, understanding specifically how SoMe can influence a program's perception of students, and which aspects of SoMe use are seen as positive versus negative will assist applicants in utilizing SoMe to present themselves to program directors in a positive way.

There were also some inconsistent findings on whether SoMe use influenced an applicant's ability to match during the application cycle. Two different surveys found no association between SoMe use and whether an applicant matched and where they matched on their rank list (11, 13). This differed from results found by Friedman et al, who found that double the proportion of matched applicants were on Twitter compared to those who did not match. They also found that matched applicants had a higher average number of Twitter followers and were more likely to post Tweets related to urology residency (12). These inconsistencies may be due to different study methods or the small sample sizes. It is also possible that confounding variables such as letters of recommendation, clerkship grades, and USMLE board scores differ between applicants who use SoMe with greater frequency and those who do not.

Similar to its rapid growth in the urologic community, use of SoMe has increased significantly in other medical specialties as a result of the COVID-19 pandemic (19–21). Notably, orthopedic surgery and otolaryngology residency programs increased their use of Twitter during the COVID-19 pandemic. However, in contrast to trends observed in urology, patterns in these two fields saw the fastest growth of program SoMe accounts on Instagram (19, 21). In addition to the rapid growth of orthopedic surgery program accounts on Instagram, one study found that the highest percentage (69.2%) of orthopedic residency applicants used Instagram for gathering information about residencies (22). This differs from studies on urology applicants which found only 3% used Instagram for purposes related to the match process (11, 22). Another interesting difference between urology and other fields was the perceived

utility of virtual open houses. A study on 2021 radiology residency applicants found that 57% of applicants reported that attending an open house influenced their decision to apply to a program. It also found that 63% of applicants that attended a virtual reception acknowledged it influenced a program's ranking, compared to only 16% of urology applicants who reported that virtual open houses had a large effect on their rank list (11, 23). Further, 56% of urology applicants stated virtual open houses had no effect on their rank list (11). Whether the early timing of the urology rank list submission deadline and match played a role in this difference, or whether the virtual open houses in other fields simply presented more influential content is a potentially valuable topic for further research.

Recent studies on the Urology Match have made it clear that the influence of SoMe on applicants was enhanced by the COVID-19 pandemic. SoMe platforms, Twitter in particular, have become avenues through which applicants can gather information about programs and interact with residents and faculty. As the role that SoMe plays on the Urology Match process continues to expand, there are several topics worth investigating. One area of further study that would prove useful for applicants would be to better understand what information program directors, program faculty members, and potential mentors prefer to see on professional Twitter accounts. This would be beneficial for applicants as they try to network within the urologic community on Twitter. This understanding can also help medical schools and advisors guide their medical students on appropriate and effective social media use. Another area of further analysis would be a more in depth look at how applicants, faculty, and program directors are utilizing Twitter and other SoMe. Understanding how these different groups interact with SoMe with greater specificity would allow for a stronger understanding of the role that SoMe plays in the Urology Match process. It would also be interesting to continue to follow trends in SoMe use following changes in the COVID-19 pandemic. As events slowly return to being held "in person", there remains a question as to whether SoMe continue to have as important a role in the urology residency application process as it did in the 2021 cycle. It is also uncertain whether the utility of Twitter for residency programs, program directors, and applicants will evolve as COVID-19 protocols, and the opportunities for in-person away rotations, open houses, and interviews change. Each of these will be important areas of further research in the coming years.

There were a few limitations noted by the included studies. Multiple studies relied on surveys with low response rates leading to an increased risk for response bias. The surveys also had different questions and answer options which made it difficult to compare results between different studies. The surveys also did not provide great detail on how they defined utilization of social media making it difficult to compare and

quantify between different studies. Further, due to the niche subject matter, and limited publicly available data on the topic, relevant published abstracts from recent conferences were included in the final results even if the entire paper and all of the results of the study had yet to be published.

## 5 Conclusions

The use of SoMe for academic discussion, mentorship, and the distribution of information by residency programs has been accelerated by the COVID-19 pandemic. Medical students are using Twitter and other SoMe sites more frequently, and residency programs are seeing the importance of outreach on these platforms. The authors believe that this trend will continue post-pandemic, and that students from all over the United States will be able to use these sites to pursue academic growth and to connect with the greater urologic community. The pandemic provided an explosion of new strategies for virtual engagement and a testing ground for their implementation. Continuing to analyze these SoMe tools will benefit students, physicians, and residency program staff.

It is also important to consider the impact of SoMe use on students' professional futures. Though program directors do not always consider SoMe posts when making residency match ranks, there is a non-negligible cohort of program directors who feel that students should not post personal content, political opinions, or about other controversial topics on SoMe. Furthermore, there are some who have ranked students lower based on the content of their SoMe posts. Currently, there is no guidance about the type of communication that can exist between an applicant and a residency program over SoMe. With the continued adoption of platforms like Twitter by medical students and residency programs, regulations on

communication over SoMe should be addressed by the Society of Academic Urologists.

## Author contributions

BY, SP, AS and BW contributed to manuscript writing and critical analysis of sources for inclusion in the study. BY, AS, and BW contributed to data collection. All authors contributed to editing the manuscript and approved the submitted work.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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