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Original Research

The Impact of Social Media on Anesthesia Resident Recruitment

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Introduction

The dissemination of residency information is a vital step in graduate medical information for both applicant and program. The media used to share such material has undergone significant changes over time. Initially, residency programs distributed printed brochures to medical schools that were delivered to prospective candidates. The American Medical Association developed the Fellowship and Residency Electronic Interactive Database Access (FREIDA) in 1988, which represented the first centralized, electronic tool for candidates to research programs.[1] As the turn of the century approached, many programs began transitioning from hard-copy brochures to formal websites in efforts to modernize their techniques for reaching candidates.[2,3] The National Residency Matching Program (NRMP) took note of this trend and developed the paperless Electronic Residency Application Service (ERAS) in 1995.[2]

In 2005, 11% of prospective radiology residents were "very comfortable" using the internet to learn about residency programs.[4] By 2014, this number was reported to be as high as 100% among medical students researching residency programs.[5] Similarly, the use of social media (SM) among medical students has also expanded with some reports demonstrating that over 90% of medical students having used such networks.[6] The role of SM in graduate medical education is broad as it can serve as a vehicle for programs to disseminate educational materials, recruit prospective candidates, and research possible professionalism issues amongst the applicant pool.[7]

While SM certainly has a far-reaching influence in graduate medical education, its use among residency program leadership remains underused. In 2012, Schweitzer et al found that only 15% of residency programs maintained a presence on SM.[8] In the face of SM popularity among prospective trainees, the infrequent use of SM by programs is puzzling. This study was performed to better delineate the role residency program-based social media accounts in recruiting prospective candidates. We surveyed anesthesia residency applicants that interviewed at 1 of 3 Mayo Clinic sites (Minnesota, Florida, and Arizona). Such information could be used by programs to develop a competitive online presence and attract desirable candidates.

Methods

After Institutional Review Board approval, names and contact information of the interviewed anesthesiology resident candidates from Mayo Clinic Scottsdale, Mayo Clinic Rochester, and Mayo Clinic Jacksonville were compiled for the 2017-2018 academic year. Following the NRMP results, a 15-item survey (Appendix A) was distributed electronically using the RedCap survey tool.[9] These anonymous survey items included general demographic information, United States Medical Licensing Examination (USMLE) scores, and degree achieved in an effort to describe the study population. In addition, the survey inquired about which SM platforms candidates maintain a profile, which they used to evaluate residencies, what content they are seeking, and to what degree the content influenced their decision. The specific SM platforms listed were selected after discussion with our institution's social media specialist and ascertaining which ones are most commonly used. These questions were included in order to examine applicants' opinions on specific SM outlets and what content they find relevant. The final 3 items ask whether the candidate has received education on SM related professionalism, whether they consider their professional identity when posting content, and their opinion on whether residency programs should use SM to evaluate candidates. These questions were designed to explore the impact of applicant-derived SM content.

Following the initial survey distribution, 3 weekly electronic reminders were sent via the RedCap Survey tool. Once an applicant had completed the survey, they no longer received reminder emails. Categorical results are reported as frequencies and percentages.

Results

A total of 247 interviews were conducted between the 3 Mayo Clinic sites. Twenty-eight applicants interviewed at more than 1 Mayo Clinic site, resulting in 219 survey invitations being distributed. Eighty-nine applicants responded (40.6%, 89/219).

Demographics are included in Table 1. The largest proportion of respondents interviewed at Mayo Clinic Rochester (70.8%, 63/89). Nearly all respondents had a Facebook account (94.4%, 84/89), while Doximity was the most commonly used SM

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platform to research prospective programs (86.5%, 77/89) (Figure 1). The majority of respondents (52.8%, 47/89) felt the presence of a residency-based SM account had at least some impact on their evaluation of prospective programs. Furthermore, a majority of respondents (50.6%, 45/89) used at least a basic internet search to research programs while a large percentage (42.6%, 38/89) used a combination of internet search engines and SM platforms. (Table 2)

The majority (52.8%, 47/89) of respondents have never received formal education regarding the maintenance of professional SM accounts although most (88.8%, 79/89) consider their professional reputation when posting content on their respective social media accounts (Table 2). When evaluating residency-based social media accounts, respondents felt that development and maintenance of interpersonal relationships with other department members was the most important feature (56.2%, 50/89) followed by using such platforms for general departmental communications (52.8%, 47/89)(Figure 2).

Discussion

In the present study, we identified several important features that may be useful for both the residency program leadership as well as prospective trainees. As expected, most applicants (94.4%, 84/89) have a Facebook account. Interestingly, Doximity was identified as the most commonly used SM venue for medical students to research prospective programs (86.5%, 77/89) even though only 64% (57/89) of these medical students maintained a profile with this network. Doximity has constructed a residency navigator function that presents basic information about programs with results from annual satisfaction surveys. Despite nearly all candidates having Facebook accounts, this group only used this network 33% (30/89) of the time to research prospective training programs. Most (50.6%, 45/89) respondents acknowledge using a basic internet search to research programs, while 43% (38/89) used a combination of internet searches and SM platforms.

As program directors look for new means of reaching prospective residents and fellows, the role of program-based Facebook pages has expanded.[10,11] Despite only 33% (30/89) of applicants researching programs through Facebook, nearly all responders have accounts with the network, leaving this as a logical venue for future recruitment efforts. According to the responses garnered by our survey, medical students feel residency-based SM accounts should address the following (in decreasing priority): promoting interpersonal relationships, an avenue for general communication, highlighting departmental research efforts, advertising social events, and disseminating educational information. In addition, other websites such as Reddit and Student Doctor Network can serve as resources for prospective residents; although these sites' impact has yet to be extensively explored.

As with any emerging technologies, new considerations and challenges will emerge for trainees. Caution is warranted in developing and maintaining SM profiles among trainees as program directors may research public accounts in an effort to identify any potential issues of professionalism.[12,13] Unfortunately, less than half (47.2%, 42/89) of applicants have received formal training in how to maintain professional SM accounts that prospective employers may investigate to look for concerning posts or content. However, this potential pitfall appears to be frequently considered as most (87.6%, 78/89) trainees admit to considering their professional reputation when posting content.

Residency recruitment is an essential endeavor for anesthesia programs and consumes significant resources.[14] Long et al recently described the importance of program websites in attracting top candidates as this survey found nearly 70% of residents deemed this an important resource in evaluating programs.[15] These authors noted a "modest impact of social media as a tool for applicant assessment of residences of interest."[15]

Among our enterprise, 2 of the 3 residency programs (Rochester and Jacksonville) use Facebook anesthesia residency group pages. These pages are used to promote and acknowledge academic efforts as well as share information about social events. Prospective applicants are encouraged to explore these pages in an effort to share what each program can offer. While the content is public and group members are able to post, program leadership monitors and maintains these accounts. Similarly, 1 program (Rochester) uses a Twitter account for their residency program with similar goals as those of their Facebook page. Some basic orientation was required in developing these accounts as program leadership engaged SM specialists at our institution to ensure these accounts achieved their program-specific goals and delivered useful content to its audience.

This study has several limitations. The surveyed population represents a homogenous group as all applicants interviewed at a Mayo Clinic training program. Indeed, many surveys fail to capture a complete sampling of the population of interest as this limitation has been previously described.[16] The authors attempted to minimize this limitation by including all 3 Mayo Clinic sites, which have distinct geographic features. Our response rate was also lower (40%, 89/219) than desired, albeit in line with previous, similar reports.[15] Surveys were sent out after NRMP match results became public, as to eliminate any perceived coercion in responding among prospective residents. This point in medical school historically represents the culmination of didactics and clinical rotations, with many students shifting their focus to relocating and starting their internship. These significant events can indeed be very time-consuming and overshadow completing optional surveys.

As the use of SM continues to expand in society, our survey results offer important insights into these platforms' role in graduate medical education. Program-specific SM accounts can be used to advertise and showcase their departments while offering applicants another vehicle to research programs. As more information becomes available for both program leadership and applicants through SM, care must be taken when posting content to ensure appropriate levels professionalism are maintained. Future work on this topic is indeed warranted and could include national surveys through major societies such as the Society of Academic

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Associations of Anesthesiology and Perioperative Medicine (SAAAPM) or the Society for Education in Anesthesia (SEA) that examine the impact on SM on the resident application process.

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Abstract

Background: The role of the internet continues to expand, particularly in the realm of graduate medical education. Residency program directors commonly use websites to share information with applicants. As social media (SM) use grows, the role of residency-based SM accounts in recruiting prospective residents remains unclear.

Objective: We sought to delineate which SM platforms prospective anesthesia residents have accounts and which platforms they use to research anesthesia residency programs.

Methods: Following the results of the National Residency Match Program (NRMP) in March 2018, we anonymously surveyed anesthesiology resident candidates from all three Mayo Clinic residency sites and inquired about which SM platforms candidates maintain a profile, which they used to evaluate residencies, and to what degree the content influenced their decision.

Results: A total of 219 surveys were distributed that resulted in 89 responses (40.6%, 89/219). Most respondents have a Facebook account (94.4%, 84/89) while Doximity was the most commonly used SM platform to research programs (86.5%, 77/89). Most respondents (52.8%, 47/89) felt the presence of a residency-based SM account had an impact on their evaluation of prospective programs. Most respondents (50.5%, 45/89) used an internet search to research programs, while a large percentage (42.7%, 38/89) used a combination of internet search engines and SM platforms.

Conclusions: While an internet search was the most commonly used technique to research programs, many applicants also used SM platforms. Doximity was the most commonly SM platform, however, more applicants have Facebook accounts, suggesting programs can use this platform to reach prospective applicants.

Key Words: Social media, Resident recruitment, Professionalism, Communication

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Figures

Figure 1. *Social media use of interviewees.*

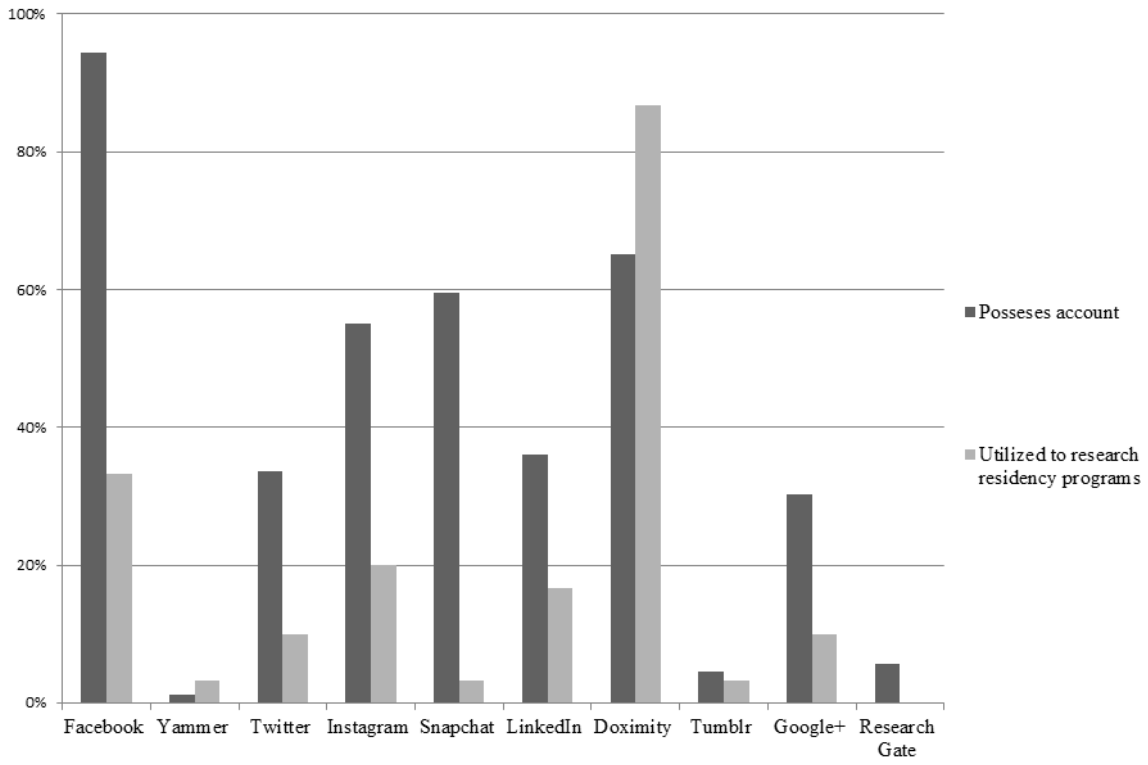

Figure 2. *Important features of residency-based social media account.**

**Respondents were able to select more than one selection*

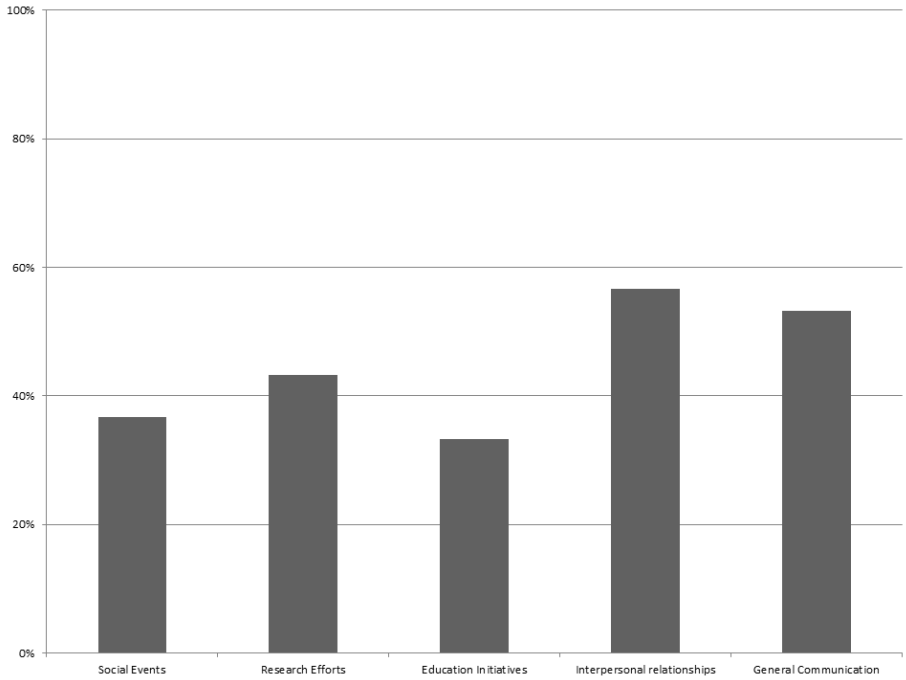

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Table 1. *Demographics*

Variable	n = 89 (%)
Location of Residency Interviewa	
Mayo Clinic Scottsdale	18 (20.2)
Mayo Clinic Jacksonville	44 (49.4)
Mayo Clinic Rochester	63 (70.8)
Gender	
Male	52 (58.4)
Female	36 (40.4)
Prefer not to respond	1 (1.1)
Age on Match Day 2018	
< 30 years	65 (73.0)
30-35 years	18 (20.2)
36-40 years	3 (3.4)
> 40 years	2 (2.2)
Prefer not to respond	1 (1.1)
Race/Ethnic Origina	
Black	6 (6.8)
American Indian/Alaskan Native	1 (1.1)
White	54 (61.4)
Asian	21 (23.9)
Native Hawaiian/Pacific Islander	1 (1.1)
Multiracial	0
Other/unknown	2 (2.3)
Ethnic Origin Hispanic	6 (6.8)
Prefer not to respond	3 (3.4)
Highest USMLE Step 1 Score	
201-210	3 (3.4)
211-220	6(6.7)
221-230	13(14.6)
231-240	21(23.6)
241-250	22(24.7)
>250	17(19.1)
Have not taken USMLE Step 1	1(1.1)
Prefer not to respond	6(6.7)

[a] total number exceeds 89 as some respondents could select more than 1 response.

USMLE = United States Medical Licensing Examination

Table 2. *Social Media Use and Impact*

Question	Response (%)
What impact did the presence of a residency-based social media account have on you as you evaluated prospective programs?	
None	42.6
Some Impact	52.8
Significant Impact	4.5
Which internet resources did you use to research prospective residency programs?	
Basic Internet Search (ie Google)	50.6
Social media	2.2
Combination of internet search and social media	42.7
Didn't research programs on internet	2.2
Othera	2.2
Have you received education on how to maintain professional social media accounts that prospective employers may evaluate?	
Yes	47.2
No	52.8
Do you consider your reputation as a professional when posting content to your social media account(s)?	
Yes	88.8
No	3.4
I don't post content	7.9

[a] Other responses included www.reddit.com and Fellowship and Residency Electronic Interactive Database (FREIDA)

Supplemental Material

Confidential

Social Media Survey

The Mayo Clinic Anesthesiology residency directors are conducting a research survey to determine the impact of social media on recruitment for residency. Attached you will find an electronic survey that takes approximately 5 minutes to complete. This survey is completely voluntary and anonymous. Your participation in the survey will have no impact on your placement on the rank order list for the National Residency Match Program (NRMP). Survey results will be used to improve social media content and may be published in medical literature.

To which program(s) did you apply? Check all that apply.

- ☐ Mayo Clinic Jacksonville
- ☐ Mayo Clinic Rochester
- ☐ Mayo Clinic Scottsdale

How old will you be on match day this year?

- ◯ Younger than 30
- ◯ 30-35 years
- ◯ 36-40 years
- ◯ Older than 40
- ◯ Prefer not to respond

What is your gender?

- ◯ Female
- ◯ Male
- ◯ Prefer not to respond

What is your race/ethnic origin?

- ☐ Black
- ☐ American Indian/Alaskan Native
- ☐ White
- ☐ Asian
- ☐ Native Hawaiian/Pacific Islander
- ☐ Multiracial
- ☐ Other/unknown
- ☐ Ethnic Origin Hispanic (A person of Hispanic ethnicity may be of any race.)
- ☐ Prefer not to respond

What is your highest USMLE step 1 score?

- ◯ < 200
- ◯ 201-210
- ◯ 211-220
- ◯ 221-230
- ◯ 231-240
- ◯ 241-250
- ◯ >250
- ◯ Prefer not to respond
- ◯ Unsure
- ◯ Have not taken USMLE step 1

7. On which of the following social media platforms do you have an account? Check all that apply.

- ☐ Facebook
- ☐ Yammer
- ☐ Twitter
- ☐ Instagram
- ☐ Snapchat
- ☐ LinkedIn
- ☐ Doximity
- ☐ Tumblr
- ☐ Google+
- ☐ Research Gate

Which internet resources did you use to research prospective residency programs?

- ☐ Basic internet search (e.g. Google)
- ☐ Searching social media sites
- ☐ A combination of the above
- ☐ I don't research prospective programs online
- ☐ Other

Supplemental Material *continued*

Confidential

Please type the OTHER internet resources you use to research prospective residency programs.

_____

If you searched social media to research prospective residency programs, which platforms did you search? Check all that apply.

- ☐ Facebook
- ☐ Yammer
- ☐ Twitter
- ☐ Instagram
- ☐ Snapchat
- ☐ LinkedIn
- ☐ Doximity
- ☐ Tumblr
- ☐ Google+
- ☐ Research Gate

What impact did the presence of a residency-based social media account have on you as you evaluated prospective programs?

- ◯ No impact
- ◯ Some impact
- ◯ Significant impact

How did the presence of a residency-based social media account impact your opinion of prospective programs?

- ◯ Positive effect
- ◯ Negative Effect
- ◯ No effect
- ◯ Depended on content

What features were you looking at when viewing a residency-based social media account? Check all that apply.

- ☐ Social events
- ☐ Research efforts
- ☐ Education Initiatives
- ☐ Development/maintenance of interpersonal relationships with other department members
- ☐ General communication within department
- ☐ Other

Please type what OTHER features you were looking at when a viewing residency-based social media account.

_____

13. Have you received education on how to maintain professional social media accounts that prospective employers may evaluate?

- ◯ Yes
- ◯ No

Do you consider your reputation as a professional when posting content to your social media account(s)?

- ◯ Yes
- ◯ No
- ◯ I don't post content

What do you think about the following statement: "Residency programs should utilize social media networks to evaluate potential residents."?

- ◯ Strongly Agree
- ◯ Agree
- ◯ Indifferent
- ◯ Disagree
- ◯ Strongly Disagree