To Post or Not to Post: Does Applicants' Social Media Affect Family Medicine Resident Recruitment?

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BACKGROUND AND OBJECTIVES: Current literature on review of applicant social media (SoMe) content for resident recruitment is scarce. With the recent increase in the use of privacy settings, and the cost of the recruitment process, the aim of this study was to describe the practice and outcomes of review of applicant SoMe in resident recruitment and its association with program director or program characteristics.

METHODS: This study was part of the 2020 Council of Academic Family Medicine's Educational Research Alliance (CERA) annual survey of family medicine residency program directors (PDs) in the United States.

RESULTS: The overall response rate for the survey was 39.8% (249/626). About 40% of PDs reported reviewing applicant SoMe content. The majority (88.9%) of programs did not inform applicants of their SoMe review practices. The most common findings of SoMe review were that the content raised no concerns (38/94; 40.4%) or was consistent with the application material (34/94; 36.2%). Forty PDs (17.0%) have ever moved an applicant up or down the rank list based on SoMe review. Review of applicant SoMe was not statistically associated with program size, program type, PD age, PD SoMe use, or program SoMe use.

CONCLUSIONS: SoMe review has not become routine practice in family medicine resident recruitment. The outcome of SoMe review was mostly consistent with the applicant profile without any concerns and only very few changed the ranking order. This calls for more studies to explore the value of SoMe review for resident selection regarding its effect on future performance.

R esident recruitment is a complex, stressful, and expensive process. In 2020, a family medicine residency program processed over 1,100 applications on average through the National Residency Matching Program (NRMP) for an average of only eight first-year resident positions.[1] In 2018, program directors (PDs) estimated spending an average of around $25,000 on recruitment, not including faculty, resident, and staff time, but individual programs reported up to $190,000 in direct recruitment expenditures.[2] PDs consistently identify perceived commitment to family medicine and evidence of professionalism and ethics as two most important factors in the selection of applicants to interview and ranking the applicants.[1] As perceptions of personal characteristics play such a crucial role in this high-stakes process, programs could be expected to seek all available information about applicants. Similarly, applicants could be expected to use all opportunities to portray themselves in ways that could enhance their selection for interview and ranking by programs. Social media (SoMe) content offers unique insights into the professional and personal characteristics of individuals, and potentially provides information that may not be apparent in the formal application materials, personal communications, or even during interviews.[4]

SoMe use is almost universal among residency applicants. At least 99% of US medical students use SoMe for educational purposes and/or personal and professional networking.[5,11] Review of applicant SoMe content has become integral to recruitment in the business world but the extent of its current use in resident recruitment is difficult to assess.[4-7] A 2019 review reported that 12% to 38% of plastic surgery PDs frequently screen the SoMe profiles of applicants. The higher rates were reported from more recent

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surveys, suggesting the practice is increasing.[6,7] The seven surveys of SoMe use in resident recruitment identified in literature reviews cover several specialties but do not include any in family medicine.[6,7]

A major focus of applicant SoMe review by residency programs is detection of unprofessional conduct.[6,9,10,18-22] At least 60% of medical schools report encountering serious SoMe content generated by students, including profane, discriminatory, or sexually explicit material; depictions of intoxication or illegal drug use; or disclosure of patient information.[14] Reports from orthopedic surgery and otolaryngology programs identified unprofessional content in the SoMe of 11% to 16% of applicants.[19,20] Moreover, 22%-35% of medical students self-report inappropriate use.[12,13] However, what is considered unprofessional or inappropriate is time and culture bound.[12] With the lack of a clear definition of unprofessional behaviors, challenges have also been raised about subjective judgments of inappropriate professional content in SoMe, and the potentially devastating impact to an applicant of innocuous content being labelled as offensive or inappropriate.[5,8] Applicant SoMe review is an informal review and consequently may be biased as it does not follow clear guidelines of what is considered unprofessional. Programs may avoid or be more cautious about assessing applicant SoMe following the adverse publicity and forced retraction of a study describing the SoMe of vascular surgery trainees.[23-25]

Given the importance of the topic, the current controversies, and the lack of information on SoMe use in family medicine residency programs, we surveyed family medicine residency PDs regarding review of applicant SoMe in resident recruitment. Areas of interest included the prevalence of applicant SoMe review overall and by selected program characteristics, how and when such reviews are conducted, the prevalence of identified inappropriate SoMe content, and the influence of review findings on applicant ranking by programs.

Methods

This survey included 10 questions that were part of a larger omnibus survey conducted by the Council of Academic Family Medicine Educational Research Alliance (CERA). The methodology of the CERA Program Director Survey has previously been described in detail.[26] The CERA Steering Committee evaluated questions for consistency with the overall subproject aim, readability, and existing evidence of reliability and validity. Pilot testing was done on family medicine educators who were not part of the target population. Questions were modified following pilot testing for flow, timing, and readability. The American Academy of Family Physicians Institutional Review Board approved the project in April 2020. Data were collected from May 11, 2020 to June 2, 2020.

The sampling frame for the survey was all program directors of Accreditation Council for Graduate Medical Education-accredited family medicine residencies in the United States. Email invitations to participate were delivered by CERA using the online program SurveyMonkey. Two follow-up emails to encourage nonrespondents to participate were sent weekly after the initial email invitation and a final reminder was sent 2 days before the survey closed, for a total of four requests to participate. The survey contained a qualifying question to remove programs that had not graduated three resident classes. Of the 698 program directors invited to participate in the survey, 34 indicated that they did not meet criteria of having graduated three residency classes. These responses were removed from the sample, providing a final population size of 626.

We used descriptive analyses (percentages) to describe participants, such as program size (small, medium, and large), program location (Northeast, Midwest, West Coast, etc.), and type (university based, community based, etc) and practice of examination of applicant SoMe. We used χ^2 analyses to examine the association between the practice of examination of SoMe with the various PD and program characteristics. Respondents who indicated three, four, five, or six SoMe accounts for themselves or their programs were collapsed into one variable "three or more," as well as frequency of use collapsed from "once a week" and "less than once a week" to "once a week or less."

Results

Program Directors (Table 1)

The overall response rate for the survey was 39.8% (249/626). The majority of respondents were non-Hispanic/Latino (226/239, 94.6%); 207 (87.0%) were White; slightly over half were male (128/243, 52.7%); and 38.6% (91/236) were between the ages of 45 and 54 years. Respondents reported a range of less than 2 months to 48 years of experience as a program director, with a mean of 7.1 (±6.6) years. Table 1 shows all PD demographics.

The majority of PDs reported at least one personal SoMe account (199/237, 84.0%), with about one-third having three or more personal accounts (73/237, 30.8%). More than half of PDs with personal SoMe accounts (114/199, 57.3%) reported using SoMe at least once per day. The number of personal SoMe accounts and the frequency of SoMe use was not associated with the age, gender, ethnicity, or race of the program director. Among the PDs who have personal SoMe accounts, there was a positive association between the number of personal accounts and their frequency of use with 50.9% of those who have three or more accounts using SoMe several times per day, as compared to 24.6% of those who have one or two accounts (χ^2 [24]=55.9, P<.0001).

Residency Programs (Table 2)

The programs surveyed were generally representative of programs nationwide, but university-based programs were overrepresented

Table 1: Demographic Summary of Program Director Respondents

Age in Years (N=236)	n (%)
<34	2 (0.8)
35 to 44	60 (25.4)
45 to 54	91 (38.6)
55 to 64	64 (27.1)
65 to 74	19 (8.1)
Gender (N=243)	**n (%)**
Male	128 (52.7)
Female	113 (46.5)
Other	2 (0.8)
Race (N=238)	**n (%)**
White	207 (87.0)
Asian	12 (5.0)
Black or African American	12 (5.0)
American Indian or Alaska Native	6 (2.5)
Native Hawaiian or Pacific Islander	1 (0.4)
Ethnicity (N=239)	**n (%)**
Non-Hispanic/Latino	226 (94.6)
Hispanic/Latino	13 (5.4)
Experience as Program Director (N=246)	**M (SD)**
Years in current position (range 0 to 48)	6.2 (6.2)
Total years as program director (range 0 to 48)	7.1 (6.6)
Number of Personal Social Media Accounts (N=237)	**n (%)**
0	38 (16.0)
1	70 (29.5)
2	56 (23.6)
>3	73 (30.8)
Frequency of Personal Social Media Use (N=199)	**n (%)**
Several times per day	57 (28.6)
About once daily	57 (28.6)
2 to 6 times per week	33 (16.6)
Once per week or less	52 (26.1)

(16.7%, compared to 8.3% nationally[27]; χ^2 [1]=12.4, *P*=.0004, 95% CI 3.3% to 21.4%). All regions were represented, with the largest proportion of responses from the East North Central region (42/239, 17.6%). Table 2 displays all residency program demographics.

Two-thirds of residency programs (161/239, 67.4%) reported having SoMe accounts. Slightly over one-third of programs (87/239, 36.4%) reported one SoMe account, whereas only 13 reported three or more

(5.4%). Nearly 79% of programs (128/162) utilized SoMe once per week or less frequently. Only three of the 162 programs (1.9%) reported daily use. There was no association between the program number of SoMe accounts or frequency of use with the PDs number of personal accounts or use of SoMe. Residency program size was positively associated with the number of program SoMe accounts (χ^2 [8]=15.7, *P*=.05), but not with frequency of postage on SoMe (χ^2 [6]=4.7, *P*=.58).

Program Review of Applicant SoMe (Table 3)

Ninety-four PDs (94/237, 39.7%) reported formal or informal examination of applicant SoMe content. Ninety-one PDs (38.4%) were not aware if anyone in their program conducted an applicant SoMe examination. Of programs providing a reason for not reviewing applicant SoMe, nearly half (44/89, 49.4%) did not perceive the review helpful, and 42.7% (38/89) had no interest in the review. Review of applicant SoMe was not statistically associated with program size, program type, PD age, PD SoMe use, or program SoMe use.

In programs that examined applicant SoMe content, just over half (51/94, 54.3%) conducted the review prior to making their ranking decisions, but only eight programs (8.5%) reviewed applicant SoMe content before offering an interview. The vast majority (209/235, 88.9%) of programs did not inform applicants of their SoMe review practices. Three programs informed applicants that SoMe would be reviewed while an additional 22 indicated that a review was possible. Only one program assured applicants that SoMe would not be reviewed. Fifteen programs (15/94, 15.9%) that attempted review reported that applicant SoMe content frequently could not be located or accessed. For applicants whose SoMe could be reviewed, the most common findings were that the content raised no concerns (38/94, 40.4%) or was consistent with the application material (34/94, 36.2%). Only one respondent (1.1%) estimated finding troubling content in the SoMe of more than 25% of applicants. However, 40 PDs (40/237, 16.9%) indicated that they had moved an applicant up or down their rank list due to information found on applicant SoMe. Programs that either formally or informally review applicant SoMe were more likely to move an applicant on their rank due to information found on SoMe (χ^2 [3]=56.6, *P*<.0001). Thirty-five out of the 40 the PDs who had moved applicants on their program rank

Table 2: Characteristics of Respondents' Residency Programs

Type (N=246)	n (%)
Community based, university affiliated	146 (59.3)
Community based, nonaffiliated	54 (22.0)
University based	40 (16.3)
Other (military, federally qualified health center)	6 (2.4)
Geographical Region (N=249)	**n (%)**
East North Central (WI, MI, OH, IN, or IL)	42 (16.9)
South Atlantic (PR, FL, GA, SC, NC, VA, DC, WV, DE, or MD)	37 (14.9)
Middle Atlantic (NY, PA, or NJ)	35 (14.1)
Pacific (WA, OR, CA, AK, or HI)	35 (14.1)
West North Central (ND, MN, SD, IA, NE, KS, or MO)	30 (12.0)
West South Central (OK, AR, LA, or TX)	26 (10.4)
Mountain (MT, ID, WY, NV, UT, AZ, CO, or NM)	22 (8.8)
East South Central (KY, TN, MS, or AL)	12 (4.8)
New England (NH, MA, ME, VT, RI, or CT)	10 (4.0)
Community Size (N=247)	**n (%)**
<30,000	23 (9.3)
30,000 to 74,999	42 (17.0)
75,000 to 149,000	57 (23.1)
150,000 to 499,999	66 (26.7)
500,000 to 1 million	26 (10.5)
More than 1 million	33 (13.4)
Program Size(N=246)	**n (%)**
<19 residents	89 (36.2)
19 to 31 residents	118 (48.0)
More than 31 residents	39 (15.9)
Number of Residency Program Social Media Accounts (N=237)	**n (%)**
0	76 (32.1)
1	87 (36.7)
2	61 (25.7)
>3	13 (5.4)
Frequency of Residency Program Social Media Posts (N=162)	**n (%)**
Several times per day	0 (0.0)
About once daily	3 (1.9)
2 to 6 times per week	31 (19.1)
Once per week or less	128 (79.0)

list had a formal or informal process for reviewing applicant SoMe, while four of the 40 PDs indicated their programs had no formal or informal review of applicant SoMe, and one indicated their program did not check applicant SoMe at all.

Discussion

Residency programs use SoME to increase program visibility and for screening of residency applicants. Two systematic reviews have shown that there are scarce studies that address SoMe and resident recruitment.[28,29] This CERA survey aimed to fill a gap in understanding the frequency of applicant SoMe

review during resident recruitment and applicant SoMe review outcomes among family medicine residency programs. About 40% of PDs reported reviewing applicant SoMe content. This is in line with the higher range of earlier reports from other specialties,[6-10] but suggests SoMe review has not become routine practice in family medicine resident recruitment. The finding that an almost equal number of PDs were unaware of any applicant SoMe review suggests low priority and lack of interest by many PDs. This is reinforced by the fact that most of the content found did not raise any concern or was consistent with the applicant material. Nevertheless, 16.9% of the programs have moved at least one applicant up or down the rank list due to the content found on SoMe. SoMe review is more likely to negatively impact than positively enhance an applicant's status. In a 2011 national survey of 22 specialties, 38% of PDs reported lowering, but only 6% recalled ever raising, applicant rankings following SoMe content review.[9] In a 2011 survey, 33% of general surgery PDs reported lowering the ranking of an applicant, or removing them from consideration entirely, because of SoMe content.10 When repeated in 2015, only 11% reported these negative outcomes.[18] It may seem that residency programs aim to use applicant SoMe review to exclude residents.

Although evidence of professionalism and ethics is one of the most important aspects of recruitment,[30] it was infrequently used as compared to academic achievements. Furthermore, the effect of SoMe content review on future performance and ethical conduct is unknown. The ability of the various residency selection criteria to predict performance has been studied in certain specialties; however, the majority relied on objective measures of academic performance in terms of grades or rank list.[31-33] A more structured assessment using professionalism minievaluation exercise score was able to predict attitude and global

Table 3: Residency Program Review of Applicant SoMe

Does anyone at your program examine applicant social media? (N=237)	n (%)
Yes—formally or informally	94 (39.7)
I am not aware of anyone checking SoMe to assess applicants	91 (38.4)
No one checks applicants' SoMe at my residency, either informally or formally	52 (21.9)
At what stage in the process is the social media examined? (N=94)	
Before offering an interview	8 (8.5)
Prior to conducting interview	14 (14.9)
Prior to ranking decisions	51 (54.3)
Multiple times or no specific time during the process	21 (22.3)
Does your program inform applicants you may be examining social media? (N=235)	
We do not inform applicants of our approach to SoMe review	209 (88.9)
We tell them we may check their SoMe	22 (9.4)
We tell them we will check their SoMe	3 (1.3)
We tell them we will not check their SoMe	1 (0.4)
If no one examines applicants' social media, what is the reason? (N=89)	
Do not think it is helpful to the process of selecting residents	44 (49.4)
Do not have an interest in checking	38 (42.7)
Do not have time	33 (37.1)
Do not know how	5 (5.6)
Other	23 (25.8)
What is most commonly found when applicant social media is examined? (N=94)	
Applicant has content on their SoMe that does not raise concerns	38 (40.4)
Applicant has a profile consistent with application material	34 (36.2)
Applicant has completely private content	12 (12.8)
Applicant cannot be found	3 (3.2)
Applicant has content on their SoMe that raises concerns	2 (2.1)
How often does your program find troubling content on applicants' social media? (N=94)	
Never	9 (9.6)
Less than 25% of the time	83 (88.3)
More than 26% of the time	1 (1.1)
Missing	1 (1.1)
Has your program ever moved an applicant up or down the rank list due to content found on social media? (N=237)	
No	197 (83.1)
Yes	40 (16.9)

Abbreviation: SoME, social media.

evaluation of first-year pediatric residents. In view of the current extensive time commitment of faculty and program directors devoted to the interviews and lack of evidence on future performance,[2] it is debatable whether the extra time needed to review the applicant SoMe is worth the effort. However, the forced shift to a virtual residency interview format during the 2020-2021 recruiting season may lead to more reliance on virtual interviews in the future, which could increase the use of SoMe reviews by programs as they free up resources previously dedicated to facilitating in-person interviews.

Programs tended to use applicant SoMe review late in the recruitment process. The most common timing was prior to making rank list decisions, suggesting it was used as a confirmatory check on assessments made from the application materials and interview rather than a screening process in selecting applicants

for serious consideration. Moreover, the majority of the programs did not inform the applicants about the possibility of SoMe review, raising concerns about the transparency of the recruitment process. Residents and medical students are becoming more aware of their SoMe content and its effect on recruitment.[15] A 2013 study reported that 60% had altered, or intended to alter, their SoMe pages before applying to residency and 36% already had privacy protected profiles.[5] By 2016, studies reported over 90% of medical students using privacy settings to shield content.[16,17] In our study, 13.5% of the program directors reported finding completely private content by the applicants. This suggests that applicants who do not protect their profiles are comfortable with content being publicly viewed by medical school and residency faculty. However, it does not address if content was significantly edited or curated to appeal to potential reviewers. The recent debates about perceptions of inappropriate content and the judgments made about applicants based on SoMe content could lead to programs avoiding SoMe review. Conversely, applicants could edit, or privacy protect, SoMe content to the extent that review provides no useful information for programs.

Limitations of the study include possible bias from participants and lack of generalizability due to the fact that 60% of family medicine program directors did not respond to the survey, possibly due to the increased demands on time during the COVID-19 pandemic or a lack of interest in the topic. Another pandemic-related limitation may be the cancellation of in-person interviews during the study period. This could have caused increased interest in obtaining information about applicants through SoMe at the time of the study, but not all programs may continue the practice when in-person interviewing

resumes. The survey questionnaire was limited in the amount of detail that could be collected; hence, we were unable to elicit important items such as the definitions and prevalence of different forms of troubling content, the precise impact of SoMe review on ranking decisions or whether the residents' application, interview or informal review have triggered the applicant SoMe review. It was also impossible to evaluate potential competing influences on PD time that limits their personal SoMe use, such as nonwork duties relating to family. Future quantitative and qualitative studies are needed. All studies concerning SoMe have time-limited generalizability due to rapid social and technological changes in its use. The dynamic landscape of SoMe provides constantly changing availability and popularity of formats and a plethora of opportunities for their use.

Conclusion

About 40% of programs included in the CERA study reported reviewing the SoMe of applicants for residency positions. Applicants were seldom informed of screening practices. Most programs conducted the review prior to making rank list decisions, suggesting it was used to validate rather than screen applicants. Interestingly, the outcome of the SoMe review was mostly consistent with the applicant profile without any concerns and only very few changed the ranking order. Consequently, it is time to look for additional value of applicant SoMe review, taking into consideration that it is a tedious process and biased by the subjectivity of what is an inappropriate behavior. This calls for more studies to examine the value of SoMe review for resident selection.

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