

## The Role of Social Networking Web Sites in Influencing Residency Decisions

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**Context:** Social networking Web sites such as Facebook have grown rapidly in popularity. It is unknown how such sites affect the ways in which medical trainees investigate and interact with graduate medical education (GME) programs.

**Objective:** To evaluate the use of social networking Web sites as a means for osteopathic medical students, interns, residents, and fellows to interact with GME programs and report the degree to which that interaction impacts a medical trainee's choice of GME program.

**Methods:** An anonymous, 10-item electronic survey on social networking Web sites was e-mailed to osteopathic medical student, intern, resident, and fellow members of the American College of Osteopathic Family Physicians. The weighted least squares test and the Fisher exact test were used for data analysis.

**Results:** A total of 9606 surveys were distributed, and 992 (10%) were completed. Nine hundred twenty-eight (93%) of the respondents used social networking Web sites, with the most popular services being Facebook (891 [90%];  $P=.03$ ), the Student Doctor Network (278 [28%]), and LinkedIn (89 [9%];  $P=.03$ ). Three hundred fifty-three respondents (36%;  $P=.52$ ) were connected with a professional organization and 673 (68%;  $P=.73$ ) used social networking

Web sites for job searching related to GME programs or postresidency employment. Within the population of 497 third-, fourth-, and fifth-year osteopathic medical students, 136 (27%) reported gleaning information about programs through social networking Web sites ( $P=.01$ ). Within the total population, 100 of 992 (10%) reported that this information influenced their decisions ( $P=.07$ ). Of note, 144 (14%) of the total 992 respondents reported that the programs they applied to did not have any presence on social networking Web sites ( $P=.05$ ).

**Conclusion:** Our results indicate that social networking Web sites have a present and growing influence on how osteopathic medical students, interns, residents, and fellows learn about and select a GME program.

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Social networking Web sites such as Facebook and LinkedIn have grown rapidly in popularity among medical students. A 2008 study<sup>1</sup> of first-year allopathic medical students found that 70% of them regularly use at least 1 of these services. This increased connectivity has brought on a myriad of new online mechanisms that integrate socialization with medical education and health care practice.<sup>2</sup> Although the use of social networking Web sites by allopathic medical students and residents for socialization or education has received a fair amount of attention in the medical literature, there have been few reports regarding how interaction with social networking Web sites influences an osteopathic medical student's choice of graduate medical education (GME) program. Gaining a better understanding of this communication dynamic could potentially provide a great deal of information for osteopathic residency program directors and osteopathic medical trainees. For instance, program directors would be better able to design strategies for disseminating information to trainee applicants by means of social networking Web sites, and trainees could be better informed about how to access this information.

A social networking Web site has been defined as an Internet service "that allow[s] individuals to (1) construct a public or semi-public profile..., (2) articulate a list of other users with whom they share a connection, and (3)

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view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site.<sup>3</sup> According to an April 2012 article<sup>4</sup> summarizing Experian's digital marketing data, the most popular social networking Web sites with the general public are Facebook, Twitter, Pinterest, and LinkedIn. These Web sites mostly support interpersonal or business social networking—with few educational features—and are available for anyone to join.<sup>5</sup> The Student Doctor Network (SDN), on the other hand, is heavily oriented to medical trainees, delivering updated information about the medical school application process to candidates for various health profession programs.<sup>6</sup> Premedical students, medical students, and residents can share information on forums hosted by the SDN and learn from each others' past experiences. There are also more "closed" physician-oriented social networking Web sites such as Sermo, Medscape Connect, and QuantiaMD, which tailor their resources to suit the needs of residents, fellows, and attending physicians. Each of these Web sites requires users to present documentation that verifies physician status.<sup>7,8</sup> The variation in accessibility, interface, and orientation among these services make the informational relationship between medical trainees and residency programs erratic and complicated.

Social networks are not the only online service for applicants. Many residency programs have established their own Web sites that list expectations, requirements, and procedures for applicants.<sup>9</sup> Likewise, the Web sites of many professional medical organizations detail the types of qualifications and prerequisites that a given specialty seeks in its residency applicants. There are also independent online forums and discussion boards (eg, the SDN), which give medical students a portal to share information and discuss strategies regarding the residency application process. Internet residency resources have several advantages over their offline counterparts; for instance, Web sites operated by residency programs are much more likely than their predecessors to be updated with the latest information, and applicants can access the information around the clock. Some social networking Web sites function as a wiki, enabling users to publish, edit, or modify existing content (eg, articles, reports, videos, images). This additional level of interactivity between applicants and GME programs is increasingly important.<sup>7,10-12</sup> Because data on a wiki can be edited by any user, it is important for GME programs to actively monitor and edit information about their programs to provide applicants with accurate information.

As residency programs expand their presence on social networking Web sites, it is necessary to investigate whether applicants actually use social networks when choosing a residency program. The purpose of the present study was to determine the degree to which osteopathic medical stu-

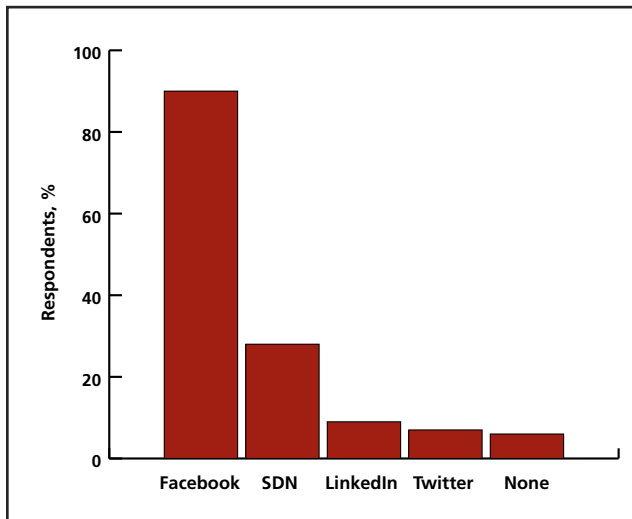
dents, interns, residents, and fellows use social networking Web sites to interact with and help select their future residency programs and fellowships. We hypothesized that although residency programs were likely using social networking Web sites to help recruit applicants, these resources were probably not yet of central importance to their recruitment efforts.

### Method

We developed a 10-question, anonymous, structured online questionnaire regarding osteopathic medical trainees' use of social networking Web sites on the basis of a literature review and our hypotheses (*Appendix*). We asked for and obtained approval from the University of Medicine and Dentistry of New Jersey's Institutional Review Board. We next sought permission from the American College of Osteopathic Family Physicians (ACOFP) to submit this questionnaire to its e-mail listserve. Permission was granted, and e-mail invitations to complete the questionnaire were sent by the ACOFP to student, intern, resident, and fellow listserve members on September 14, 2011. Attending osteopathic physicians were not included in the survey. The survey was administered through the SurveyGizmo Web site, and no incentives to complete the survey were offered. The individual e-mail was sent once, and a reminder to complete the survey by October 15, 2011, was included in the subsequent ACOFP e-newsletter. Response data from the survey were aggregated and analyzed using SAS statistical software (version 9.2; SAS Institute, Cary, North Carolina). We used the weighted least squares test and the Fisher exact test for data analysis ( $\alpha=.05$ ).

### Results

We sent 9606 survey invitations via e-mail and received 992 completed surveys, yielding a response rate of 10%. The results indicate that 928 of respondents used 1 or more social networking Web sites (*Figure 1*). Facebook was the most frequently cited social network, with 891 respondents (90%) stating they had used it ( $P=.03$ ). The trainee-oriented portal SDN ranked second in the survey, used by 278 respondents (28%), and LinkedIn was third, with 89 respondents (9%) ( $P=.03$ ). In general, Facebook was popular across all groups surveyed, as indicated by 893 of 992 respondents (90%) in all trainee categories. Two hundred eighty-two (94%) of 300 first- and second-year osteopathic medical students used Facebook. Of the 277 respondents who used the SDN, 167 (60%) were third-, fourth-, or fifth-year osteopathic medical students, while 73 (26%) were first- or second-year osteopathic medical students and 22 (8%) were interns. Third-, fourth-, and fifth-year osteopathic medical students represented half of the respondents (497 [50%]) (*Figure 2*). Three hundred first- and second-year osteopathic medical students made up the next largest group (30%), followed by 99 interns (10%) and 89 residents (9%).



**Figure 1.** Social networking Web sites used by survey respondents ( $N=992$ ) answering the question, "Are you using any of the following social networking Web sites?" More than 1 answer was permitted. **Abbreviation:** SDN, The Student Doctor Network.

Our results indicated that 907 of 992 respondents (91%) stated they used social networking Web sites for "personal use," while 205 (21%) used the services for "education." Of all respondents, 46 (5%) stated they used the services for "job searching." The majority of job searching respondents, 38 of 46 (83%), were students, though proportionally, the rate of osteopathic medical student job searching (38 of 797 [5%]) was similar to the overall rate. Within the intern and resident responses, 4 of 99 interns (4%) and 4 of 89 residents (5%) reported that they were using the services for job searching.

"Education" was also a common use of social networking Web sites, with 63 (21%) of 300 first- and second-year osteopathic medical students and 119 (24%) of 497 third-, fourth-, or fifth-year osteopathic medical students using social networking Web sites for this purpose ( $P<.001$ ). Proportionally, fewer interns (11 of 99 [11%]) and residents (7 of 89 [8%]) were using the services for educational purposes.

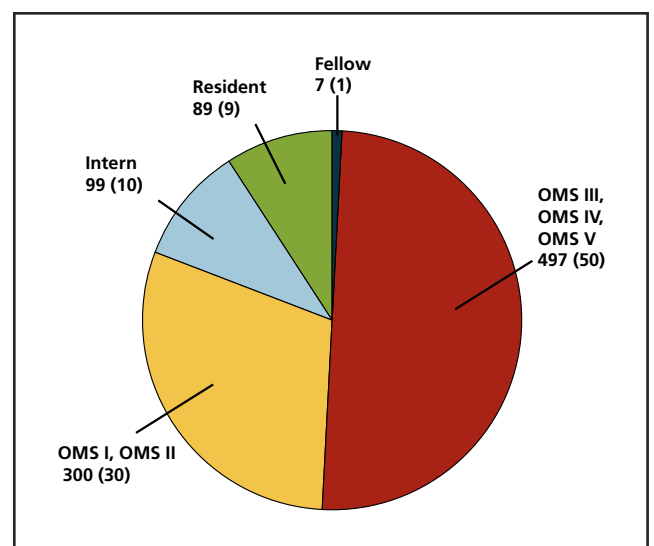
Most respondents connected with friends and family on social networking Web sites, with 899 of 992 respondents (91%) indicating that they were connected to friends and 849 (86%) indicating family ( $P=.52$ ). Furthermore, 353 respondents (36%) stated they were connected to professional organizations by means of these services ( $P=.52$ ). Thirty-two of 89 residents (35.9%) and 109 (36.3%) of 300 first- and second-year osteopathic medical students were among the groups most connected to professional organizations. Three hundred fifty-four (35.7%) of 992 respondents in all categories, however, indicated they were con-

nected to professional organizations by means of social networking Web sites.

When asked which specialties they were interested in, respondents' top 3 answers were family medicine, "unsure," and internal medicine with answers totaling 302 (30%), 232 (23%), and 115 (12%), respectively. A further breakdown of these data yielded a slightly different picture: 109 (36%) of 300 first- and second-year osteopathic medical students were unsure of which specialty they wanted to enter, as were 22.7% of third-, fourth-, and fifth-year osteopathic medical students (Figure 3).

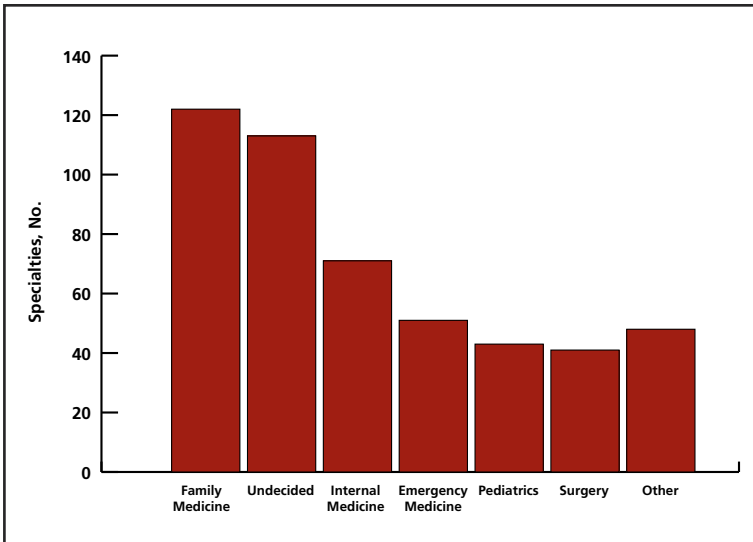
Additionally, 332 of 992 respondents (35%) reported that they used social networking Web sites to gather information about residency positions. Among the 497 third-, fourth-, and fifth-year osteopathic medical students, 194 (39%) said they used the sites to research residencies, 84 (17%) said they were researching internships, and 22 (4%) said they were researching fellowships ( $P=.73$ ). Thus, 300 (60%) of 497 third-, fourth-, and fifth-year osteopathic medical students indicated that they used social networking Web sites to research future employment. In addition, 673 of 992 respondents (68%) reported using social networking Web sites for researching any GME program or postresidency employment.

Of 992 respondents, 172 (17%) stated that they used social networking Web sites to find information about residencies, fellowships, or postresidency employment ( $P=.01$ ). When asked if their desired residency or fellowship programs had a social networking presence, however, 849 respondents (85%) indicated that the programs did not. We found that only 144 of 992 respondents (14%) found a GME program with a social networking presence ( $P=.05$ ).



**Figure 2.** Current professional status of survey respondents ( $N=992$ ) in response to the question, "Please select one of the following as your current position." Results are reported as No. (%). **Abbreviation:** OMS, osteopathic medical student.

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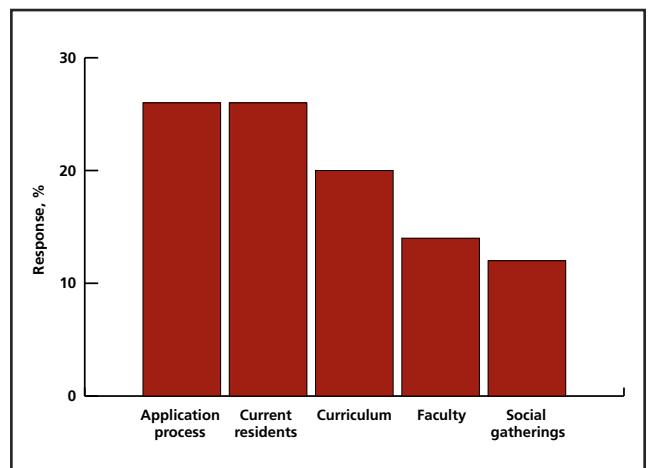


**Figure 3.** Medical specialties of OMS III, OMS IV, and OMS V survey respondents ( $n=496$ ) in response to the question, "What field of medicine are you pursuing?" Only 1 response was allowed. The category "Other" includes obstetrics/gynecology, anesthesiology, dermatology, and psychiatry. **Abbreviation:** OMS, osteopathic medical student.

unclear, however, how thoroughly applicants researched a residency's social network presence when they completed the survey. Regardless, it would seem that many programs have not yet taken advantage of social networking Web sites in the medical trainee recruitment process, and those that have may not be getting the word out adequately about their social networking

Web site presence.

Several potential avenues exist for future research on osteopathic medical trainee use of social networking Web sites. For instance, future studies could identify a range of educational content on various social networking Web sites and how trainees use this content. One issue with Facebook is that you cannot currently download educational materials, such as documents or presentations, from Facebook groups. There is nothing preventing groups from linking to such material elsewhere, but by doing so, the user would be directed to another site to access the information. It would be worthwhile to investigate how GME programs disseminate educational information using the widely divergent structures of today's social networking Web sites. Results of the survey indicate that



**Figure 4.** Informational categories sought out by survey respondents ( $N=992$ ) on a graduate medical education program's social networking Web site in response to the question, "Of the programs that had social networking Web sites, which of the following categories were you seeking information about?" More than 1 choice was allowed.

We asked respondents what they sought in a program's social networking presence, whether or not their desired program had one: 262 respondents (26%) chose the application process; 262 (26%), current osteopathic residencies; 201 (20%), curriculum requirements; and 139 (14%), faculty (Figure 4).

The survey also asked whether a GME program's social networking Web site had any influence on the respondent's eventual residency or fellowship decision. One hundred respondents (10%) indicated that it influenced their ultimate choice ( $P=.07$ ). This percentage held fairly consistently throughout the professional categories, with third-, fourth-, and fifth-year osteopathic medical students and fellows valuing the social networking Web sites' contributions most highly (11.5% and 14.3%, respectively) and residents valuing it the least (6.5%). Of note, 136 (27%) of 497 of third-, fourth-, and fifth-year osteopathic medical students reported learning information about a GME program by means of a social networking Web site.

### Comment

The central observation of our survey results is that the majority of osteopathic medical students, interns, residents, and fellows are using social networking Web sites, most prevalently Facebook. This observation is concordant with findings from a past study,<sup>1</sup> which indicated Facebook had become immensely popular among medical students. One surprising factor was the precipitous drop in social networking use among interns and residents compared with medical students. It is unclear, however, whether these results are explained by postgraduate medical trainees having less time for social networking Web sites or whether some other factor is at play.

Another crucial point was that 849 of 992 respondents (86%) stated that they were unaware of a social networking presence for their preferred residency programs. It is

respondents are using some of these services more frequently for educational purposes than others; for instance, services such as Facebook arguably emphasize general social networking and have fewer ways for users to use them in an educational fashion than does, say, the SDN.<sup>2,5,9,13</sup> Thus, future studies might determine whether some social networking Web sites are being used more frequently for educational purposes than others. More data are also needed regarding how many residency programs have actually established a social networking Web site presence. This information is, to our knowledge, all but absent from the literature.

Past relevant research has focused on the interactions between GME applicants and Web sites established by GME programs. Some studies have found that many applicants located residency Web sites through residency-specific directories such as FREIDA and ERAS, and there have also been indications that applicants found such Web sites useful for comparing residency programs.<sup>14-16</sup> One study<sup>15</sup> also indicated that some students rejected particular programs on the basis of what they saw on a program's Web site. Thus, it would seem beneficial for GME programs to establish their social networking presences through major directories such as FREIDA. It is crucial that GME program directors understand the difference between a social networking Web site and a traditional Web site; social networking sites allow users to become engaged in the site by not only viewing content but also creating it and adding information and opinions to a Web site. Further, programs should also be careful to establish and monitor their social networking presences to ensure that their program is presented in the best possible light.

One potential limitation of this study is responder bias. Because the survey was disseminated by e-mail, respondents may have been more likely to use social networking Web sites because they already use the Internet. A further limitation is that the survey was designed without the benefit of having a substantial amount of existing literature on GME programs and social networking.

Another limitation was the response rate of 10%. Because the survey was sent to the ACOFP listserve, the study may be limited in the sense that its perspective may include only that of family medicine trainees. It is worth noting, however, that many respondents indicated that they were interested in specialties outside of primary care. Overall, 171 of 992 respondents (17%) reported interest in a nonprimary care specialty—eg, dermatology, surgery, psychiatry, anesthesiology—and 696 of 992 respondents (70%) were not specifically interested in family medicine. In addition, the survey was limited by the exclusion of medical students or residents who were attending allopathic schools.

The data obtained in the present study appear to indicate that GME programs, in general, have yet to use their

social networking Web sites in a robust manner to recruit candidates. However, the widely varying design and usage patterns of these social networking services make it difficult to suggest a general recruiting strategy for GME programs. Facebook, for instance, would seem to be an attractive service for recruitment because of its immense popularity with osteopathic medical trainees at all levels. However, its design as a general social networking service arguably makes it difficult to adapt for direct recruitment purposes.<sup>7,10</sup> Because of Facebook's limitations, one strategy GME programs should consider is advertising their Facebook presence through more than 1 social networking service or other online medium (eg, e-mail, non-social networking Web sites) to drive interested candidates to their Facebook group. From there, the program could use the Facebook group as a hub for recruiting without having to continually replicate that effort on other social networking Web sites. For instance, links to a GME program's Facebook group could be e-mailed to potential candidates, listed on the program's Web site, "tweeted" on Twitter, mentioned in residency listings on services like Sermo and QuantiaMD, and placed in forum postings on the SDN.<sup>10</sup> This strategy would also make candidates aware that these services have a social networking Web site presence in the first place; after all, lack of awareness appears to be a reason why some applicants have not noticed programs' social networking Web site presence. It allows programs to focus their efforts on the largest and most popular social networks used by medical students.

## Conclusion

Our results indicate that social networking Web sites have a present and growing influence on how students and residents gather information about and make decisions on selecting GME programs. Because the majority of respondents already use 1 or more social networking Web sites, GME programs can now potentially reach a greater number of applicants than through traditional Web sites only. Anyone redesigning the Web presence of GME programs should be aware of a program's lack of representation on social networking Web sites and should implement some sort of social networking Web site presence for prospective applicants. By doing so, these GME programs will be further able to market their openings to prospective residents.

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## Appendix

Ten-question survey distributed to osteopathic medical students, interns, residents and fellows through the listserv of the American College of Osteopathic Family Physicians.

The purpose of the following questions is to learn how medical students and residents are using social networking sites (SNWs). The following survey will take about 5 minutes of your time. Any answers provided will be anonymous. Thank you!

1. Are you using any of the following social networking sites (SNW)? Check all that apply.

- Facebook
- MySpace
- Twitter
- LinkedIn
- Student Doctor Network
- Sermo
- QuantiaMD
- Medscape Physician Connect
- None

2. What are you using them for? Check all that apply.

- Personal use
- Job searching
- Education
- None

(continued)

## Appendix (continued)

3. Who are you "connected" to on a SNW site? Check all that apply.

- Friends
- Family
- Co-workers/Colleagues
- Patients
- Professional organizations
- None

4. Please select one of the following as your current position:

- Medical student – first or second year
- Medical student – third, fourth or fifth year
- Intern
- Resident
- Fellow

5. What field of medicine are you pursuing? Check only one.

- Pediatrics
- Family Medicine
- Internal Medicine
- Emergency Medicine
- Surgery
- Dermatology
- Anesthesiology
- Psychiatry
- Obstetrics/Gynecology
- Unsure

6. If you are using them for job searching purposes, what positions are you interested in? Check all that apply.

- Internship
- Residency
- Fellowship
- Post-residency employment

7. Have you learned information about residencies, fellowships, and/or post-residency employment through SNW sites? Check only one.

- Yes
- No

8. Did any of the residency/fellowship programs you applied to have a SNW site? Check only one.

- Yes
- No

9. Of the programs that had SNW sites, which of the following categories were you seeking information about? Check all that apply.

- Application process
- Curriculum requirements of the program
- Faculty
- Current residents
- Social gatherings within the department
- None

10. Did the program's SNW site have any influence on your eventual residency or fellowship decision? Check only one.

- Yes
- No