

# Attitudes and Practices of Surgery Residency Program Directors Toward the Use of Social Networking Profiles to Select Residency Candidates: A Nationwide Survey Analysis

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**OBJECTIVE:** To determine whether residency program directors (PDs) of general surgery and surgical subspecialties review social networking (SN) websites during resident selection.

**DESIGN:** A 16-question survey was distributed via e-mail (Survey Monkey, Palo Alto, California) to 641 PDs of general surgery and surgical subspecialty residency programs accredited by the Accreditation Council for Graduate Medical Education (ACGME).

**SETTING:** Institutions with ACGME-accredited general surgery and surgical subspecialty residency programs.

**PARTICIPANTS:** PDs of ACGME-accredited general surgery and surgical subspecialty residency programs.

**RESULTS:** Two hundred fifty (39%) PDs completed the survey. Seventeen percent ( $n = 43$ ) of respondents reported visiting SN websites to gain more information about an applicant during the selection process, leading 14 PDs (33.3%) to rank an applicant lower after a review of their SN profile. PDs who use SN websites currently are likely to continue (69%), whereas those who do not use SN currently might do so in the future (yes 5.4%, undecided 44.6%).

**CONCLUSIONS:** Online profiles displayed on SN websites provide surgery PDs with an additional avenue with which to evaluate highly competitive residency applicants. Applicants should be aware of the expansion of social media into the professional arena and the increasing use of these tools by PDs. SN profiles should reflect the professional standards to which physicians are held while highlighting an applicant's strengths and academic achievements. (*J Surg* 69:292-300. © 2012 Association of

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**KEY WORDS:** social networking, Facebook, resident recruitment, program directors

**COMPETENCIES:** Professionalism, Interpersonal and Communication Skills, Practice Based Learning and Improvement

## INTRODUCTION

The emergence of online social networking (SN) and its expansion into daily life is ushering in a new era of digital communication, dramatically changing the way individuals interact and maintain interpersonal relationships.<sup>1</sup> SN communities, such as Facebook (Palo Alto, California), Twitter (San Francisco, California), and MySpace (Beverly Hills, California) allow users to share large volumes of personal thoughts and information, which are chronicled into various forms of media that used to be limited to a small and intimate group of friends or colleagues.<sup>2</sup> Because the information posted to these websites does not always conform to a person's professional status and obligations to society, the exposure of SN into the professional arena may lead to career-impacting consequences resulting from inappropriate online conduct. An especially precarious situation can be created for young medical professionals at the beginning of their careers, particularly those pursuing highly competitive surgical specialties.

The American College of Surgeons (ACS) advocates professionalism as a quality that extends beyond the operating room, clinic, and hospital and into the community setting.<sup>3</sup> Recognizing the privileges of self-regulation, autonomy in practice, and monopoly over the use of specialized knowledge that society bestows on physicians,<sup>1,4-5</sup> medical educators and the ACS agree that student physicians should be held to the highest standards of morality and professionalism and that these privi-

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leges must be earned and respected constantly.<sup>3</sup> Nonetheless, controversy exists over where the line separating a student's professional and social life should be drawn and to what extent a student's social persona can be used as an indicator of their clinical competence.<sup>6</sup> Furthermore, it remains difficult to define and measure what the Accreditation Council for Graduate Medical Education (ACGME) calls "professional accountability" to society, a component of one of its six core competencies.<sup>6,7</sup> Unfortunately, young trainees may not be fully aware of the implications content they make available to the public can have on their medical careers.<sup>6</sup>

The explicit use of social media for screening job applicants in various business sectors is well documented,<sup>8</sup> whereas the repercussions of posting offensive content to an SN website are also abundant in the lay press.<sup>9-12</sup> Even though recent studies have shown that almost 65% of medical students actively use Facebook<sup>6</sup> and approximately 60% of U.S. medical schools have reported incidents of students posting "unprofessional" content online,<sup>13</sup> reports of residency program directors (PDs) using this tactic in evaluating potential residents is limited.

The objective of this study was to determine general surgery and surgical subspecialty PDs' experience with the use of SN during resident selection and recruitment, the impact on applicant ranking, and PDs' opinions regarding the ethical implications of using social media to judge an applicant's suitability for a surgical residency.

## MATERIALS AND METHODS

### Study Population

The study population comprised 641 PDs of ACGME-accredited general surgery and surgical subspecialty residency programs, offering categorical PGY-1 positions starting July 2011. This group included general surgery, 4 subspecialty (neurosurgery, orthopedic surgery, urology, otolaryngology), and 3 integrated surgery/subspecialty (thoracic surgery, plastic surgery, vascular surgery) programs within the United States. Military-based programs, osteopathic programs, and Puerto Rican programs were excluded from this study.

### Survey Design

An online survey was developed with SurveyMonkey (Palo Alto, California) using questions adapted from similar studies<sup>4,6</sup> and original inquiries based on investigator-generated hypotheses. The survey consisted of 16 questions designed to assess the PDs' overall experience and opinions regarding the use of social media for applicant evaluation and selection. Five main categories were addressed in the survey, including program and PD demographics, respondent use of social media in applicant evaluation, impact of social media on candidate selection, planned use of social media in the future, and the ethical implications of judging candidates based on their online personas. No disqualifying criteria were defined in the survey, although

skip logic was programmed to allow participants to bypass inapplicable questions. The questions were written in a multiple-choice format using categorical variable responses, with some allowing more than 1 answer and some providing the option to enter an open-ended text response. Four questions queried demographics, including PD age, PD sex, program specialty, and program type. One question asked respondents whether they have ever used SN websites to learn more about an applicant, which was followed by 8 questions addressing the specific websites visited by those who indicated "yes," their purpose in exploring those websites, whether the content of those websites ultimately affected the ranking of the candidate, how the ranking was impacted, and the reasons for it. The survey concluded with 1 question pertaining to the director's plans to use SN websites in the future and 1 multipart question using a 5-point Likert scale (5—strongly agree, 3—neutral, and 1—strongly disagree) to assess the respondents' overall level of agreement with several statements relating to the ethical aspects of using social media to judge candidates.

The initial survey underwent testing by 2 surgery department administrators (chairman and PD) for relevance and clarity of each question/response item as well as overall length and facility of use. The study was granted exemption from consent by the Institutional Review Board at the Saint Barnabas Medical Center, Livingston, New Jersey.

## Data Collection and Analysis

The program directors' e-mail addresses were obtained through the Fellowship and Residency Electronic Interactive Database. An e-mail containing a brief summary of the study hypothesis and a request to participate in the study was anonymously distributed via SurveyMonkey to all PDs meeting inclusion criteria. Links to the survey as well as an option to "opt-out" of all future correspondences were provided and made available to participants for 60 days between February and April 2011. An e-mail reminder was sent weekly to all nonrespondents. The survey links were tied to each subject's e-mail address uniquely, which eliminated the possibility of duplicate responses.

The response data collected through SurveyMonkey was exported into a Microsoft Excel database (Microsoft Corporation, Redmond, Washington). A statistical analysis was performed using the Fisher exact test for categorical data, with the level of significance set at  $p < 0.05$ .

## RESULTS

### Program and PD Demographics

The respondent characteristics are described in Table 1. Two hundred fifty (39%) PDs responded to the survey, with the highest response rate from vascular surgery ( $n = 11$ , 45.8%) and the lowest from thoracic surgery ( $n = 2$ , 22.2%) PDs. Male respondents outnumbered female respondents [male  $N = 220$  (88.0%); female  $N = 30$  (12.0%)], which likely reflects that

**TABLE 1.** Demographics of Surgical Program and Program Directors Responding to the Social Networking Survey

Survey Item	Number of Responses (%)
Sex	
Male	220 (88.0)
Female	30 (12.0)
Age (years)	
<40	20 (8.0)
41–50	88 (35.2)
51–60	105 (42.0)
61–70	32 (12.8)
>70	5 (2.0)
Program type	
University based	178 (71.2)
Community based, university affiliated	50 (20.0)
Community based	22 (8.8)
Program specialty	
Vascular surgery* (N = 24)	11 (45.8)
Orthopedic surgery (N = 121)	53 (43.8)
Urology (N = 93)	40 (43.0)
General surgery (N = 204)	83 (40.7)
Otolaryngology (N = 83)	30 (36.1)
Plastic surgery* (N = 24)	8 (33.3)
Neurosurgery (N = 83)	23 (27.7)
Thoracic surgery* (N = 9)	2 (22.2)

\*Integrated general surgery/subspecialty program.

men hold the most PD positions in surgical fields. Most responding PDs were associated with university-based (n = 178, 71.2%) programs, 20% (n = 50) with community-based university-affiliated programs, and 8.8% (n = 22) were from community-based programs. More than 75% of responding PDs were between 41 and 60 years of age (41–50 years, 35.3%; and 51–60 years, 41.8%), whereas 8% were <40 years and only 2% were >70 years old.

### Use of Social Media in Resident Recruitment

Overall, 17.3% of PDs indicated that they have reviewed SN websites to gain additional information about an applicant during the selection process, with the highest incidence reported by plastic surgery (n = 3, 37.5%) and the lowest by thoracic surgery (N = 0, 0.0%) (Table 2). Female PDs browsed applicant SN sites more frequently than their male colleagues (female 24.1% vs male 16.4%), although this difference did not reach statistical significance (p < 0.3). SN use was most prominent among younger PDs, with 25% of respondents <40 years old and 24% of respondents 41–50 years old indicating that they browse SN websites to learn more about their applicants. This finding was associated with a decreased frequency of use with increasing age (51–60 years, 14.3%; >60 years, 5.4%). Facebook was the most commonly used SN website (n = 39, 92.9%), followed by MySpace (n = 6, 14.3%). Although not considered an SN website, Google (n = 11, 26.2%) was cited frequently as an online source of information about applicants (Table 3). Specialty-specific online communities, such as

<http://urologymatch.com> and <http://orthogate.com> were also mentioned in open-ended responses. Interest in determining whether an applicant openly exhibited unprofessional behavior was the most common reason given for browsing SN websites (n = 33, 78.6%). Gaining a better feel for the applicant as a person (n = 9, 21.4%), exploring an area of concern that may have arisen from a candidate's application or interview (n = 9, 21.4%), and determining what an applicant thinks about the respondent's program (n = 6, 14.3%) were other reasons given for social media research (Table 3).

### Impact of Social Media on Candidate Selection

Fourteen of 42 respondents (33.3%) who reported visiting SN websites indicated that a candidate had been ranked lower after a review of their online profile, whereas only 1 (2.4%) reported ranking a candidate higher (Table 3). Overall, 62.5% (n = 10) of PDs in this group indicated that an applicant was more likely to be ranked lower after a review of their SN profile, whereas only 1 respondent (6.3%) indicated that an applicant was more

**TABLE 2.** Demographics of PD Respondents who Currently use Social Networking to Aid in Resident Recruitment

	Number of Respondents (%)	
	Browse Social Networks*	Ranked Applicants Lower†
Sex		
Male (N = 220)	36 (16.4)	11 (30.6)
Female (N = 29)	7 (24.1)	3 (42.9)
Age (years)		
<40 (N = 20)	5 (25.0)	2 (8.0)
41–50 (N = 87)	21 (24.1)	8 (38.1)
51–60 (N = 105)	15 (14.3)	3 (20.0)
61–70 (N = 32)	1 (3.1)	1 (100.0)
>70 (N = 5)	1 (20.0)	0 (0.0)
Program type		
University based (N = 178)	34 (19.1)	11 (32.3)
Community based, university affiliated (N = 50)	7 (14.0)	2 (28.6)
Community based (N = 21)	2 (9.5)	1 (50.0)
Program specialty		
Plastic surgery‡ (N = 8)	3 (37.5)	1 (33.3)
Otolaryngology (N = 30)	11 (36.7)	4 (36.4)
Orthopedic surgery (N = 53)	10 (18.9)	1 (10.0)
Urology (N = 40)	6 (15.0)	3 (50.0)
Neurosurgery (N = 23)	3 (13.0)	1 (33.3)
General surgery (N = 82)	9 (11.0)	4 (44.4)
Vascular surgery‡ (N = 11)	1 (9.1)	0 (0.0)
Thoracic surgery‡ (N = 2)	0 (0.0)	0 (0.0)

\*Percentage based on N = total number of respondents per response group.

†Percentage based on the number of respondents who indicated they browse SN.

‡Integrated general surgery/subspecialty program.

**TABLE 3.** Selected PD Survey Responses Addressing the Use of Social Networking Websites in Resident Selection and Their Effect on Applicant Rank\*

Survey Questions and Response Options	Number of Responses (%)
<i>Have you ever browsed a social networking site to gain more insight into an applicant during the resident selection process? (N = 249)</i>	
Yes, N = (%)	43 (17.3)
No, N = (%)	206 (82.7)
<i>Which social networking sites do you utilize?*</i> (N = 42)	
Facebook	39 (92.9)
Google	11 (26.2)
MySpace	6 (14.3)
Twitter	4 (9.5)
ValueMD	1 (2.4)
Student Doctor Network	0 (0.0)
<i>What is your primary purpose in browsing social networking sites? (N = 42)</i>	
Determine whether the applicant exhibits unprofessional behavior either inside or outside a professional setting	33 (78.6)
Get a better feel for what the applicant is like as a person	9 (21.4)
Further explore a nonacademic area of concern arising from a candidate's application or interview	9 (21.4)
Determine what an applicant thinks about your program	6 (14.3)
Ascertain what other programs the applicant is applying to	0 (0.0)
Obtain a general idea of how an applicant will rank your program	0 (0.0)
<i>Has an applicant ever been ranked lower as a result of the content seen on their social networking profile? (N = 42)</i>	
Yes, N = (%)	14 (33.3)
No, N = (%)	28 (66.7)
<i>What were the reasons for ranking the applicant lower? (N = 14)</i>	
Applicant posted inappropriate information or photographs	13 (92.9)
Content showed the applicant abusing drugs and/or alcohol	7 (50.0)
Applicant posted negative remarks about colleagues, residents or faculty	2 (14.3)
Applicant posted negative comments about and/or expressed disinterest in your program	1 (7.1)
Content reflected discriminatory (sexist, racist, etc) behavior or opinions by the applicant	1 (7.1)
Applicant shared confidential patient information	1 (7.1)
Applicant lied about their academic achievements and qualifications	0 (0.0)

\*Question only available if response was yes to "Has the ranking of an applicant ever been affected by what you learned about them on a social networking site?"

†Question only available if response was yes to "Have you ever browsed a social networking site to gain more insight into an applicant during the resident selection process?"

likely to be ranked higher. The remainder of responding PDs stated that an applicant's rank position typically remains unaffected (n = 5, 31.3%).

The most common reasons given for ranking candidates lower included the sharing of inappropriate content and photographs (n = 13, 92.9%), exhibition of alcohol and/or drug abuse (n = 7, 50.0%), and posting of negative comments about colleagues, residents, or faculty (n = 2, 14.3%). One respondent reported ranking an applicant higher after finding content supporting their academic achievements.

### Future Uses of Social Media

Among those who have browsed SN websites during resident recruitment, 29 of 42 respondents (69%) indicated that they intend to continue this practice, 1 (2.4%) reported no plans to continue this for future recruitment, and the remaining 12 (28.6%) were undecided. Eleven of 204 respondents (5.4%) who have never browsed SN for recruitment purposes plan to

adopt this practice in the future, although 44.6% (n = 91) have yet to decide.

### Ethical Implications of Judging Candidates Based on Their Online Persona (Table 4)

Two hundred twenty-seven respondents (92.7%) agree that physicians in training should be held to similarly high standards within their social life as they are held to in their professional life, whereas 83.7% (n = 205) feel that the image an applicant portrays on an SN profile reflects on him/her as a physician. However, consensus regarding the acceptability of judging a candidate's professional fit for a program based on the content of their profile is less pronounced, with 62.9% (n = 154) of PDs agreeing with this practice and 24.1% (n = 59) expressing neutrality. Only 17.1% (n = 42) agree that reviewing an applicant's social profile should be a routine part of the selection process, whereas 30.2% of respondents (n = 74) believe that doing so would not be worth the time or resources.

## SN in General Surgery and the Surgical Subspecialties

Eighty-three general surgery PDs (40.7%) and 167 PD of surgical specialties (38.2%) participated in the survey ( $p < 0.60$ ) (Table 4). Sex distribution was similar between the 2 groups and consistent with the general respondent population, with most responding PDs being men (sex 83.1%, subspecialty 90.4%;  $p < 0.10$ ). Overall, general surgery PDs were older than subspecialty PDs with only 30.1% ( $n = 25$ ) of general surgery PDs being  $< 50$  years of age and 67.5% ( $n = 56$ ) being 50-70 years old compared with 49.7% ( $n = 83$ ,  $p < 0.005$ ) and 48.5% ( $n = 81$ ,  $p < 0.004$ ) of subspecialty PDs, respectively (Table 5). More than 20% ( $n = 34$ ) of subspecialty PDs have accessed SN websites to gain additional insight into their applicants compared with only 11% ( $n = 9$ ) of general surgery PDs ( $p < 0.08$ ), although general surgery respondents were more inclined to downgrade an applicant's rank after viewing the content posted to these websites (general 44.4%, subspecialty 30.3%;  $p < 0.50$ ). General surgery PDs who use SN currently might be more likely to continue browsing these websites for future recruitment than subspecialty PDs (general 77.8% vs subspecialty 66.7%;  $p < 1.00$ ), although subspecialty PDs who do not currently use SN may be more willing to adopt this practice in the future (general 2.8% vs subspecialty 6.8%;  $p < 0.20$ ).

## DISCUSSION

With more than 80% of ACGME-accredited positions filled each year by American medical graduates, general surgery and the surgical subspecialties are among the most competitive and difficult residency programs to attain.<sup>14,15</sup> Although the process of evaluating and selecting suitable applicants for these highly coveted positions relies heavily on a candidate's academic achievements, nonacademic qualities and "fit" within a program are playing an increasingly significant role in recruitment. Social networking websites, such as Facebook, Twitter, and MySpace provide a less discretionary view of an individual as a person, including their interests and values, which may not be apparent in a formal interview setting.

A recent survey study conducted at our institution revealed that nearly 60% of residency applicants actively use Facebook ( $> 5$  times per week), an estimate that is consistent with the 65% incidence reported by Thompson et al.<sup>6</sup> Their study revealed also that only 37.5% of these users kept their profiles private and, although most users were found to post seemingly benign material to their profiles, a small but significant population of student physicians provided incriminating content containing foul language, sexist or racist comments, and/or photographs showcasing heavy alcohol use that was accessible to the public.<sup>6</sup> Another study, exploring the administrative experience with online misconduct, reported that 60% of U.S. allopathic medical schools have reported incidents of students posting unprofessional content online, including indiscretions

pertaining to patient confidentiality violations, discriminatory language and behavior, posting of sexually explicit material, and public displays of intoxication.<sup>13</sup> However, any indication that PDs use information gleaned from these websites to make applicant rank decisions is limited to a single study of pharmacy program directors.<sup>2</sup> Alternatively, reports detailing the repercussions following reckless SN use by teachers, police officers, and other business professionals are gaining popularity in the media and lay press.<sup>9-12</sup> A recent CareerBuilder (Chicago, Illinois) study revealed that 45% of hiring managers use social media to screen applicants, which is a dramatic increase from the 22% incidence reported the year before.<sup>8</sup> Thirty-five percent of employers decided not to hire a candidate after viewing their SN profile, whereas 18% reportedly hired an applicant after finding content that supported the applicant's strengths, suggesting that a well-constructed profile highlighting desirable professional qualities can also work in favor of an applicant.

The results from our study suggest that PDs of surgical residency programs are beginning to embrace this emerging social construct as an added measure of a candidate's overall personality and the behaviors they permeate outside of the clinical setting. Most PDs operate on the belief that the image an applicant portrays on an SN profile is a direct reflection of their qualities as a physician. More than 17% of responding surgical PDs browse SN websites to acquaint themselves with an applicant's persona before finalizing their rank order lists for the residency match, although the incidence of this practice may be higher among the surgical subspecialties than for general surgery (20.4% vs 11%;  $p < 0.07$ ). Overall, one third of PDs have ranked a candidate lower after a review of their SN profile, with urology and general surgery showing the strongest tendency to downgrade an applicant's rank (50% and 44.4%, respectively). Although it would be reasonable to speculate that a well-constructed SN profile highlighting an applicant's positive qualities would have the opposite effect on selection, only 1 respondent (2.4%) reported ranking a candidate higher after finding constructive content supporting their academic achievements. In contrast, only 4% ( $n = 20$  of 454) of pharmacy residency directors surveyed by Cain et al<sup>2</sup> reported viewing applicant SN profiles with the explicit purpose of making recruitment decisions, 28% ( $n = 7$  of 20) of whom indicated that a candidate was impacted negatively after the review and 20% ( $n = 5$  out of 20) reported a positive outcome for the applicant.

Younger PDs are more inclined to use SN profiles as a tool for applicant evaluation than their more senior colleagues, with 49% of responding PDs who reported visiting applicant SN websites being  $\leq 50$  years old and only 5.4% being  $> 60$  years old. This observation is not surprising considering that these individuals may have grown up using these online applications and, as such, are more comfortable with adapting new technology to current selection protocol.<sup>2</sup> Because responding PDs from the subspecialties were generally younger than those from General Surgery, the age difference may be a confounding factor contributing to the disparity in SN utilization between the

**TABLE 4.** Responding PD Opinions Regarding the Evaluation of Applicant Social Networking Profiles During Resident Selection and a Comparison of Responses Between Directors of General Surgery vs Surgical Subspecialty Programs

	Agree or Strongly Agree‡			Disagree or Strongly Disagree‡			p Value§
	Overall	General Surgery*	Surgical Subspecialties†	Overall	General Surgery	Surgical Subspecialties	
Physicians in training should be held to the same high standards with which they portray themselves socially and professionally.	227 (92.7)	75 (92.6)	152 (92.7)	5 (2.0)	1 (1.2)	4 (2.4)	1.00
The image portrayed on an applicant's online profile, including photos and comments, reflects upon him/her as a physician.	205 (83.7)	67 (82.7)	138 (84.1)	14 (5.7)	8 (9.9)	6 (3.7)	0.08
It is acceptable for a program director to judge an applicant's professional fit for the program based on the content of his/her online profile.	154 (62.9)	54 (66.7)	100 (61)	32 (13.1)	10 (12.3)	22 (13.4)	0.84
Review of an applicant's social networking profile should be a routine part of the selection process.	42 (17.1)	7 (8.6)	35 (21.3)	76 (3.1)	29 (35.8)	47 (28.7)	0.02
Reviewing an applicant's online profile is not worth the time and resources and should not be used in recruitment.	74 (30.2)	24 (29.6)	50 (30.5)	62 (25.3)	13 (16.0)	49 (29.9)	0.18

\*General surgery, N = 81.

†Includes neurosurgery, urology, orthopedic surgery, otolaryngology, vascular surgery, plastic surgery, thoracic surgery; N = 164.

‡Percentages based on the total number of respondents who participated in this aspect of the survey, including those who responded "neutral."

§Calculated using the Fisher exact test to compare general surgery with the surgical subspecialties. "Neutral" responses were not included in this calculation.

**TABLE 5.** Comparison of Demographics and Responses Given by PDs of General Surgery vs Surgical Subspecialty Residency Programs

	General Surgery, N = (%)*	Surgical Subspecialties, N = (%)†	p Value
Sex			0.1023
Male	69 (83.1)	151 (90.4)	
Female	14 (16.9)	16 (9.6)	
Age (years)			0.0043
<40	3 (3.6)	17 (10.2)	
41–50	22 (26.5)	66 (39.5)	
51–60	43 (51.8)	62 (37.1)	0.0048
61–70	13 (15.7)	19 (11.4)	
>70	2 (2.4)	3 (1.8)	
Program type			0.0001
University based	37 (44.6)	141 (84.4)	
Community based university affiliated	29 (34.9)	21 (12.6)	
Community based	17 (20.5)	5 (3.0)	
Have you ever browsed an SN website during applicant selection?			0.0753
Yes	9 (11.0)	34 (20.4)	
No	73 (89.0)	133 (79.6)	
Has an applicant ever been ranked lower as a result of the content you saw on their profile?‡§			0.4508
Yes	4 (44.4)	10 (30.3)	
No	5 (55.6)	23 (69.7)	
Do you plan to continue using SN for future recruitment?			1.0000
Yes	7 (77.8)	22 (66.7)	
No	0 (0.0)	1 (3.0)	
Undecided	2 (22.2)	10 (30.3)	
Do you plan to start using SN for resident evaluation?			0.2011
Yes	2 (2.8)	9 (6.8)	
No	41 (56.9)	61 (46.2)	
Undecided	29 (40.3)	62 (47.0)	

\*General surgery, N = 83.

†Includes neurosurgery, urology, orthopedic surgery, otolaryngology, vascular surgery, plastic surgery, thoracic surgery; N = 167.

‡Respondents were only asked this question if they answered "yes" to "Has the ranking of an applicant ever been affected by what you learned about them on a social networking website?"

§General surgery, N = 9 respondents; surgical subspecialties, N = 33 respondents.

||General surgery, N = 72 respondents; surgical subspecialties, N = 132 respondents.

two groups. Younger PDs, influenced by their own personal social media experience, may inherently be more capable of maintaining an objective distinction between an applicant's on-line persona and their professional identity.

The ethical implications surrounding the covert use of social media as a strategy for acquiring additional information about a residency applicant is subject to debate. In other settings, time spent outside of a clinical environment is considered personal and not subjected to professional scrutiny, but public SN interactions seem to be a unique exception to this rule.<sup>6</sup> Some argue that the content posted to an SN website is merely an illustration of how a student spends their personal time and should neither be considered a reflection of their professional identity nor evidence suggesting a lack of accountability to their patients.<sup>2</sup> Others, however, feel that the voluntary sharing of inappropriate, and often incriminating, content in a public forum represents poor judgment, particularly when no effort has been made to maintain adequate privacy, and calls into question their ability to use good judgment in the clinical setting.<sup>16</sup> Furthermore, a report by Papadakis et al<sup>17</sup> revealed a positive

correlation between unprofessional behavior in medical school and future state medical board disciplinary action, an observation that may have similar prognostic significance with respect to inappropriate online behavior.<sup>13</sup>

Our results suggest that an overwhelming majority of Surgery PDs believe that physician trainees are expected to conduct their social lives with a high degree of professionalism (92.7%) and that the content displayed on an applicant's SN profile directly reflects upon them as a physician (83.7%). However, consensus regarding the acceptability of using social media to judge an applicant's suitability for a program is less prominent, with only 63% of respondents agreeing to this practice. Subspecialty PDs were more inclined than general surgery PDs to believe that reviewing an applicant's SN profile is a worthwhile practice and should be implemented as a routine part of the selection process (subspecialty 21.3% vs general 8.6%;  $p < 0.03$ ).

Although much attention has been given to the negative consequences arising from online misconduct, this may serve to support the theory that medical students are not aware of how

their online activity reflects on them as medical professionals or the career-impacting implications of posting unprofessional material to their personal SN profiles. To put this point in perspective, a separate survey e-mailed to all residency candidates who applied for positions at our institution revealed that nearly 60% of respondents actively use Facebook (at least 5 times per week), although less than 25% of these individuals indicated that they believe PDs visit Facebook during the recruitment process and only 34% believed their ranking could be influenced by the content viewed on their profiles (manuscript in preparation). Because a formal definition or measure of online professionalism does not exist currently, a discrepancy between what students believe to be seemingly innocuous social content and what is viewed as inappropriate and unprofessional by medical educators is observed.<sup>18,19</sup> This disconnect may have devastating consequences for highly qualified candidates pursuing competitive surgical residencies who are unwittingly disregarded for the flagrant information provided online. Therefore, some have suggested that a set of content guidelines be established to direct the use of SN websites by medical professionals.<sup>19</sup> Educating these preprofessionals to be more cognizant of the implications of their SN activity and to be more vigilant with ensuring the privacy of their profiles should affect what they portray online.<sup>13,20</sup>

The limitations of this study include the possibility of responder bias. Respondents may have had more experience with using SN websites and may have been more likely to participate in the survey if they had experience using these websites to research residency candidates. Additionally, those who responded may have had greater ethical concerns regarding the use of online content to judge an applicant or had stronger opinions about the importance of professionalism in medical training. An additional limitation is that the survey addressed issues relating to “inappropriate” and “unprofessional” content posted to an SN website, but these terms were not defined and, therefore, were subject to the individual respondent’s own interpretation.

## CONCLUSIONS

Social networking websites are a ubiquitous presence in society that allows users to disseminate large volumes of personal thoughts and information to an expansive online audience, potentially subjecting themselves to professional scrutiny and judgment. Although a seemingly modest proportion of surgery PDs are using SN websites as a tool to evaluate an applicant’s fit for their program, many of these individuals will be influenced negatively by the information they encounter. With time and continued growth of SN, these recruitment decisions will fall on a generation of savvy Internet users who will promote the continued expansion of social media into the medical forum. An awareness of the professional implications of broadcasting inappropriate online material that may be viewed by unintended audiences can prevent devastating consequences, particularly for those vying for highly competitive surgical residency

positions. Medical educators should establish programs that raise awareness of the potential for PD scrutiny of an applicant’s SN profile during the selection process and instruct students on the importance of using privacy settings online. A constructive profile that reflects the professional standards expected of physicians may lend credence to an applicant’s academic achievements while highlighting nonacademic strengths, earning them an advantage over competing candidates.

## REFERENCES

1. Landman MP, Shelton J, Kauffmann RM, Datilo JB. Guidelines for maintaining a professional compass in the era of social networking. *J Surg Educ.* 2010;67:381-386.
2. Cain J, Scott DR, Smith K. Use of social media by residency program directors for resident selection. *Am J Health Syst Pharm.* 2010;67:1635-1639.
3. McGinnis LS, Jr. Presidential address: professionalism in the 21st century. *Bull Am Coll Surg.* 2009;94:8-18.
4. Gruen RL, Arya J, Cosgrove EM, et al. Professionalism in surgery. *J Am Coll Surg.* 2003;197:605-608.
5. American College of Surgeons. Task Force on Professionalism. Code of professional conduct. *J Am Coll Surg.* 2004;199:734-735.
6. Thompson LA, Dawson K, Ferdig R, et al. The intersection of online social networking with medical professionalism. *J Gen Intern Med.* 2008;23:954-957.
7. ACGME. Outcomes project. Common program requirements. Available at: <http://www.acgme.org/Outcome/>. Accessed February 10, 2011.
8. Grasz J. Forty-five percent of employers use social networking sites to research job candidates, CareerBuilder survey finds. Available at: <http://www.careerbuilder.com/share/aboutus/pressreleasesdetail.aspx?id=pr519&csd=8/19/2009&ed=12/31/2009>. Accessed April 4, 2011.
9. Stross R. How to lose your job on your own time. Available at: [http://www.nytimes.com/2007/12/30/business/30digi.html?\\_r=2&pagewanted=1&adxnlnx=1298048413-MCgf7lkMfCQRbk/qQ9Zlhg](http://www.nytimes.com/2007/12/30/business/30digi.html?_r=2&pagewanted=1&adxnlnx=1298048413-MCgf7lkMfCQRbk/qQ9Zlhg). Accessed April 4, 2011.
10. Shapira I. When young teachers go wild on the web: public profiles raise questions of propriety and privacy. Available at: <http://www.washingtonpost.com/wp-dyn/content/article/2008/04/27/AR2008042702213.html>. Accessed April 4, 2011.
11. Zhou K, Facebook. Privacy, social networking can make or break job opportunities. Available at: <http://www.dailybruin.com/index.php/article/2010/06/facebook-privacy-social-networking-can-make-or-bre>. Accessed April 4, 2011.

12. Goode E. Police lesson—Social network tools have two edges. Available at: [http://www.nytimes.com/2011/04/07/us/07police.html?pagewanted=1&\\_r=1&emc=eta1](http://www.nytimes.com/2011/04/07/us/07police.html?pagewanted=1&_r=1&emc=eta1). Accessed April 10, 2011.
13. Chretien KC, Greysen SR, Chretien JP, Kind T. Online posting of unprofessional content by medical students. *JAMA*. 2009;302:1309-1315.
14. Green M, Jones P, Thomas JX, Jr. Selection criteria for residency: results of a national program directors survey. *Acad Med*. 2009;84:362-367.
15. National Resident Matching Program. Results and data: 2010 main residency match. National Resident Matching Program. Available at: <http://www.nrmp.org/data/resultsanddata2010.pdf>. Accessed April 4, 2011.
16. Cain J. Online social networking issues within academia and pharmacy education. *Am J Pharm Educ*. 2008;72:10.
17. Papadakis MA, Teherani A, Banach MA, et al. Disciplinary action by medical boards and prior behavior in medical school. *N Engl J Med*. 2005;353:2673-2682.
18. Peluchette J, Karl K. Social networking profiles: an examination of student attitudes regarding use and appropriateness of content. *Cyberpsychol Behav*. 2008;11:95-97.
19. Cain J, Scott DR, Akers P. Pharmacy students' Facebook activity and opinions regarding accountability and e-professionalism. *Am J Pharm Educ*. 2009;73:104.
20. Coutts J, Dawson K, Boyer J, et al. Will You Be my friend? Prospective teachers' use of Facebook and implications for teacher education. Paper Presented at: Proceedings of Society for Information Technology and Teacher Education International Conference; 2007; Chesapeake, Va.