Residency Information Preferences of Recent Pharmacy Residency Applicants

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Abstract

Background: The increasing number of both postgraduate year (PGY)-1 and PGY-2 residency programs and applicants requires all parties to discriminate among the many options available in the marketplace. Studies assessing the information preferences of pharmacy students searching for residencies, including the utility and popularity of information sources (eg, school brochures, program Web sites, etc), are lacking. **Objective:** The preferences of recent residency applicants for types and sources of residency program information were assessed to improve the recruitment strategies of residency programs. **Methods:** A survey was distributed to 1515 residency program directors (RPDs). Questions solicited information regarding use of electronic resources and preference of information used to discriminate between residency programs prior to and during the application/interviewing process. **Results:** One hundred ninety-two RPDs responded and forwarded the survey to 522 PGY-1 residents and 207 PGY-2 residents. Completed surveys were submitted by 75.7% (n = 395) of PGY-1 residents and 57.5% (n = 119) of PGY-2 residents (overall response rate 71.3%). Participants ranked the program's Web site followed by a flash drive containing information about the program as the most preferred sources of information. Participants noted that required (n = 464) and elective learning experiences (n = 463) and current positions of past residents (n = 310) were very important information when deciding to apply to a program. Overall, 68.3% (n = 341) of participants indicated that they agreed or strongly agreed that electronic information sources were preferred over paper information sources. **Conclusion:** Residency programs should dedicate resources to ensuring that their Web site includes information regarding learning experiences and the current positions of past residents.

Keywords

resident, preference, recruitment, PGY-1, PGY-2

Background

The American Society of Health-System Pharmacists (ASHP) has stated its goal of 90% of pharmacy school graduates directly involved in patient care completing a pharmacy residency by 2015.¹ Much progress has been made toward that goal as the number of residency programs and residency program applicants has been increasing in recent years, with the number of ASHP-accredited residency programs doubling since 1994.² In the 2013-2014 application cycle, 5978 residency applicants registered with Pharmacy Online Residency Centralized Application Service and submitted applications for 3394 available positions in 1584 residency programs.³ The increasing number of both postgraduate year (PGY)-1 and PGY-2 residency programs and applicants requires all parties to discriminate among the many options available in the marketplace. This creates an inherent need for the program to efficiently deliver the most pertinent information to the applicant. Conveying accurate and pertinent residency information to applicants helps ensure the most efficient matching of applicants and programs.

Previous research on the preferences of residency applicants has focused on the information needs of medical students. A 2003 survey of medical residents found that 69% (n = 151) of respondents received information about residency programs primarily from the program Web site in an online residency directory.⁴ Eighty percent (n = 175) reported finding these Web sites helpful when deciding where to apply, and 72% (n = 157) reported that a complete Web site could substitute for a printed brochure. However, similar studies assessing the information preferences of pharmacy students searching for residencies, including the utility and popularity of information sources (eg, school brochures, program websites, etc), are lacking.

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We developed a survey to assess the preferences of recent residency applicants for various types and sources of residency program information and materials in order to inform and hopefully improve residency programs' information sharing tactics. These findings may be useful to residency program directors as they develop marketing strategies for their programs and may allow them more efficient allocation of resources.

Methods

A questionnaire regarding recruitment information preferences was developed as an online survey (Survey Monkey, Palo Alto, CA) and distributed via email to 1515 residency program directors compiled in October 2012 from the ASHP online residency program directory, which included programs in all stages of the accreditation process. Since there was not an opportunity to contact potential respondents directly, program directors were requested to forward the email containing the survey link to their current PGY-1 and/or PGY-2 residents and to also reply to the researchers via email with the number of PGY-1 and/or PGY-2 residents to which the survey was forwarded. The number of residents to which the survey link was forwarded as indicated by residency program directors was used as the best estimate of response rate denominator.

The survey included 18 questions. Questions solicited information regarding demographics, type of residency program being completed, resources used to research residency programs, attendance at ASHP Midyear Clinical Meeting 2011, the utility of social media resources such as Facebook and Twitter, the utility of various information sources and formats, electronic devices used to assess information regarding residency programs, and the utility of various information content based on relevance to the decision to apply for a residency. Questions regarding the preference of receiving information as a paper copy versus an electronic copy and the use of smartphones were also included to assess the "tech-savyness" of the participants. The survey was piloted by PGY-1 ($n = 20$) and PGY-2 ($n = 9$) residents at Midwestern University, Northwestern Memorial Hospital, and Rush University Medical Center in Chicago, IL. The pilot group's feedback was used to revise survey questions as deemed appropriate by the researchers. Two reminder emails were sent during the data collection period (April 1, 2013, to April 30, 2013). This study was determined to be exempt from full review by the Midwestern University Institutional Review Board.

Statistical Analysis

Descriptive statistics were used to quantify responses using Microsoft Excel 2010 (Microsoft Corporation, Redmond, WA).

Results

One hundred ninety-two residency program directors forwarded the survey to 522 PGY-1 and 207 PGY-2 residents. There were a total of 520 participants with an overall response rate of 71.3%. PGY-1 residents accounted for 76.3% ($n = 395$) of participants, while PGY-2 residents accounted for 23% ($n = 119$; Table 1). The majority of responses were from PGY-1 pharmacy residents (80.7%, $n = 318$), while the most represented PGY-2 residencies were ambulatory care (16%, $n = 19$), critical care (16%, $n = 19$), oncology (10.9%, $n = 13$), infectious diseases (9.2%, $n = 11$), and pediatrics (9.2%, $n = 11$).

The most common age range of participants was 21 to 25 years (53.3%, $n = 277$; Table 1). Females accounted for 71.3% ($n = 371$) of participants, and 94.4% ($n = 491$) of participants indicated they currently used a smartphone (ie, email-enabled cellphone). A majority of participants preferred to read printed copies of journal articles than an electronic copy on a screen (81%, $n = 421$), although 68.3% ($n = 341$) of participants either agreed or strongly agreed that they had an overall preference for electronic over paper information sources in general (Table 1).

The most common activities designed to prepare students for residency or help students select an appropriate residency were experiential rotations (85.8%, $n = 446$), lectures related to residency training or residency preparation advice in a required course (53.3%, $n = 277$), and elective courses related to residency training or residency preparation advice (48.3%, $n = 251$). Information regarding residency training would have been most meaningful if provided during the first professional year of pharmacy school for 34% ($n = 177$) of participants; 30% ($n = 156$) indicated the second professional year of pharmacy school and 26.9% ($n = 140$) indicated the third professional year. Only 5.8% ($n = 30$) of participants selected their fourth professional year of pharmacy school as the time when such information would have been most meaningful.

The 2011 ASHP Midyear Clinical Meeting was attended by 81.9% ($n = 421$) of participants. The mean number (SD) of applications submitted per study participant for the 2012 match was 6.4 ± 3.7 . The most common resources used to research residency programs were the ASHP Online Residency directory (92.6%, $n = 475$), residency program Web sites (92.0%, $n = 472$), and colleagues or mentors (58.1%, $n = 298$; Figure 1).

A majority of participants, 90.3% ($n = 454$), were currently maintaining Facebook accounts, while 22.3% ($n = 112$) of participants were currently maintaining Twitter accounts. When asked about their willingness to "like" a program's Facebook page, 46.9% ($n = 213$) of participants indicated it was very unlikely. Likewise, 36.6% ($n = 41$) of participants indicated they were very unlikely to follow a residency program's Twitter account.

Table 1. Demographics of Survey Participants and Technological Proficiency and Preferences of Survey Participants (N = 520)^a.

Age group	
21-25	187 (36.0)
26-30	277 (53.3)
31-35	36 (6.9)
>35	17 (3.3)
Female	371 (71.3)
Male	145 (27.9)
PGY-1 Resident	395 (76.3)
Pharmacy	318 (80.7)
Community pharmacy	42 (10.7)
Managed care	10 (2.5)
PGY-2 Resident	119 (23.0)
Ambulatory care	19 (16.0)
Critical care	19 (16.0)
Oncology	13 (10.9)
Infectious diseases	11 (9.2)
Pediatrics	11 (9.2)
Internal medicine	7 (5.9)
Psychiatry	7 (5.9)
Geriatrics	5 (4.2)
Pharmacotherapy	5 (4.2)
Pharmacy administration	5 (4.2)
Solid organ transplant	5 (4.2)
Drug information	3 (2.5)
Cardiology	2 (1.7)
Emergency medicine	2 (1.7)
Managed care pharmacy systems	2 (1.7)
Medication safety	2 (1.7)
Attended ASHP Midyear Clinical Meeting 2011	421 (81.9)
Number of programs applied to in 2012 (mean, SD)	6.4 (3.7)
Currently use a smartphone (email-enabled cell phone)	491 (94.4)
Prefer hard copies of journal articles	421 (81.0)
Prefer electronic copies of journal articles	95 (18.3)
Strongly prefer electronic information sources in general	136 (27.3)
Prefer electronic information sources in general	205 (41.2)
Neutral with respect to electronic versus paper information sources	108 (21.7)
Prefer paper information sources in general	47 (9.4)
Strongly prefer paper information sources in general	2 (0.4)
Maintain an active Facebook account	454 (90.3)
Very likely to "like" a program's Facebook page	40 (8.9)
Somewhat likely to "like" a program's Facebook page	51 (11.4)
Indifferent toward "liking" a program's Facebook page	66 (14.8)
Unlikely to "like" a program's Facebook page	77 (17.2)
Very unlikely to "like" a program's Facebook page	213 (47.7)
Maintain an active Twitter account	112 (22.3)
Very likely to follow a program's Twitter account	18 (16.1)
Somewhat likely to follow a program's Twitter account	20 (17.9)
Indifferent toward following a program's Twitter account	16 (14.3)
Unlikely to follow a program's Twitter account	17 (15.2)
Very unlikely to follow a program's Twitter account	41 (36.7)

^aData reported as (n, %) unless otherwise specified.

The most useful sources of residency program information, as assessed on a scale 1 to 5 (1 being least useful and 5 being most useful), included residency program Web sites, flash drives containing information about the residency, and residency program informational videos, with mean rankings of 4.9, 3.0, and 2.9 respectively (Figure 2). A computer was used to access sources of information about residency programs during the application process by 98.2% (n = 492) of participants, while a smartphone and tablet were used by 40.5% (n = 203) and 20.2% (n = 101) of participants, respectively.

The most useful information content based on relevance to the decision to apply for a residency, as assessed on a scale of 1 to 3 (1 being not very important and 3 being very important) included elective learning experiences available in the residency, required learning experiences, and current positions of past residents, with mean rankings of 2.9, 2.9, and 2.6, respectively (N = 499; Figure 3).

Discussion

We found that a residency program's Web site, accessed through the ASHP online directory, was the most useful source of information to residency applicants based on likelihood of use. Furthermore, the most important information content to applicants based on relevance to the decision to apply for a residency included required and elective residency learning experiences and current positions of past residents. Applicants in general were more likely to prefer electronic as opposed to paper information sources. Age differences were noted with the use of the ASHP online directory, Personnel Placement Service (PPS), or local showcases to obtain information; the maintenance of a Twitter account; and the use of a computer to search for program information (data not shown). Gender differences were noted with the preference to read a hard copy of an article versus an electronic copy on a screen, the use of a program's Web site to obtain information, and the maintenance of a Twitter account (data not shown).

These findings suggest that residency program directors could most efficiently utilize their resources by developing well-designed, easily accessible Web sites that contain content most important to applicants. The importance of the Web site is further underscored by the fact that it is the only program link available through the ASHP directory. A 2005 survey of 188 medical residency applicants found that residency curriculum and hospital size/patient demographics were the most useful content found on a program's Web site, rated 3.49 and 3.17, respectively, on a scale of 1 to 4 (4 being the most useful) followed by faculty information (3.03) and resident biographies (3.00).⁵ A 2003 study among dental residents found the most important factors considered when ranking programs included good relationships between residents and good relationships with attendings.⁶

Figure 1. Utilization of residency information resources (N = 507).

Figure 2. Residency program information sources by likely format of use (N = 505).

Note. Likelihood of use assessed on a 5-point scale (1 = least likely to use, 5 = most likely to use).

Supplemental flash drives, videos, and barcode technology may help make a program stand out, but they were ultimately not valued by candidates as much as the program Web site itself. The appropriation of resources toward developing a brochure should be secondary to that of the

program Web site. In addition to preferring electronic over paper material sources, applicants reportedly used a program's brochure to research residency information almost half as often as they turned to the program's Web site. Enthusiasm for online sources of information has been

Figure 3. Residency program information content by relevance to the decision to apply for a residency (N = 499).

Note. Relevance assessed on a 3-point scale (1 = not very important, 2 = somewhat important, 3 = very important).

reported previously. A 2008 study describes the popularity of an online reservoir of residency training information intended to supplement live seminars for pharmacy students at a particular pharmacy school unable to attend the sessions due to rotations or other commitments.⁷

The preference for instruction on residency program information earlier in pharmacy school has also been reported previously. A survey of 723 pharmacy residents and fellows indicated a desire for residency information earlier than the last professional year.⁸ While our findings reveal an overall preference for electronic residency information, it is important to not wholly discount the utility of in-person information exchange. A 2005 evaluation of a faculty-led seminar on how to prepare for and select a pharmacy residency found that students' intentions to complete a residency nearly doubled from 15% before implementing the program to 27.6% afterwards.⁹

While social media is very popular, its usefulness as an outreach tool may be limited in this context as applicants overwhelmingly indicated they would not be willing to follow/like program pages. The hesitance of applicants to engage with a program via social media may stem from fear of reprisal due to what may be perceived as unprofessional content on their own profile. A recent survey found that 20% (n = 91) of residency program directors had viewed a pharmacy residency applicant's social media information and that 52% (n = 236) had "encountered e-professionalism issues, including questionable photos and posts revealing unprofessional attitudes."¹⁰

Additionally, the benefit of developing a robust online infrastructure may extend beyond the use of providing convenient and useful residency program information to potential applicants. As expressed by Fortin et al, the Internet can be used to help address and offset the increasing cost of administrative communication for residency programs as the number of training sites for a particular program expands.¹¹

Limitations for our study must be considered. The time lag between survey assessment and participants' actual application process may have led to recall bias; however, general agreement of our data with previous studies suggests this did not significantly affect our results. Furthermore, we only assessed the information preferences of successfully placed applicants as it would not have been possible to email all candidates entering the match that did not successfully match or scramble. Responses were dependent on residency program director distribution of the survey to the residents; however, due to the lack of an "overall" resident list this was considered an appropriate method. Of those residency program directors that did distribute the survey we found a high response rate from residents (71.3%), which was generally representative of the national distribution of residency positions and types.

Conclusion

The overall residency program information preference among applicants was for electronic information, especially information appearing on a residency program's Web site.

This reveals areas where residency program directors can best allocate their limited resources toward attracting applicants. Information on the resident program's Web site should include required and elective rotations, current positions of past residents, information regarding the program's location, project requirements, and preceptor and current resident biographies. Additional research is needed to elucidate additional characteristics that make a residency more desirable to applicants.

Authors' Note

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