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Residents' Perceptions of Usage of the Current Alumni and Attending Network for a Formal Mentorship Program in an Academic Affiliated Community Hospital Radiology Residency

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A B S T R A C T

Mentor-mentee relationships within radiology residencies can add significant value to a resident's overall experience. Studies demonstrate that mentorship programs can increase satisfaction for residents and faculty alike by reducing stress, easing career related decisions, increasing involvement with research, improving teaching and communication skills, and finally increasing leadership roles. In a survey of radiology program directors, 85% of program directors find such a program beneficial but only 57% have a formal program in place. Totally, 42% of program directors believe a structured mentorship program is necessary. Studies have also shown that female residents prefer female mentors. Alumni serve as an ideal group for resident mentorship as they do not face the pressures of internal faculty. No study to date in diagnostic radiology literature uses an alumni network in establishing a formal mentorship program. The objective of this study is to implement a formal mentorship program within an academic affiliated radiology residency by using program alumni and internal attending physicians for potentially increasing faculty engagement, improving resident morale, research opportunities, and networking for fellowship and job opportunities.

Introduction

Mentorship is universally recognized as essential facet of academic medicine.[1] Yet it is often undervalued and uncompensated in radiology and in medicine in general. However, it plays a pivotal role in strengthening the next generation of radiologists as it encourages professional exploration.[2] Good mentors are considered attending physicians with seniority who are approachable, accessible, empathic, and patient.[3] Development of a mentor-mentee relationship can be beneficial for both parties. As a mentor, such mentorship can be a rewarding experience. Additionally, a resident can serve a valuable aid in the time-consuming parts of research endeavors. However, the time-consuming aspect of mentorship limits the number of mentees a mentor can have, often restricting them to 2 or 3.[4] Mentor-mentee relationships within radiology residencies can add significant value to a resident's overall experience as well. Studies demonstrate that mentorship programs can increase satisfaction for residents by reducing stress, easing career related decisions, increasing involvement with research, improving teaching and communication skills, and finally increasing leadership roles. In a survey of radiology program directors (PDs), 85% of PDs find such a program beneficial but only 57% have a formal program in place, 42% of PDs believe a structured mentorship program is necessary.

Studies have also shown that female residents prefer female mentors.[5] Residents demonstrate increased satisfaction with freely choosing mentors rather than being assigned.[6,7] PDs and internal faculty are in a unique position to naturally be mentors to their residents.

Having a formalized program can lead to increased faculty engagement and more vested interest in residents' careers. These relationships, nonetheless, can be complicated, especially if there is a perception of favoritism by certain attending and PD mentors.[4] Additionally, previous studies have shown the potential for a contentious relationship regarding intellectual property ownership between mentors and mentees regarding research endeavors. Mentorship, however, is also not excluded to only attending physicians as senior residents can provide added benefit as a "big brother or big sister" role by discussing their personal experiences in their respective programs.[8]

The size of the residency also plays a significant role in establishing a mentorship program. At larger programs, finding active mentors is a comparatively easier task.[2] Additionally, mentorship programs at smaller residencies, defined as fewer than 16 residents, are difficult to establish due to fewer resources and opportunities for scholarly activity.[9] For those reasons, alumni can serve as an ideal group for overall career mentorship without the drawbacks that internal faculty face. Although there are many prior studies showing the benefits of resident mentorship, there are none to date in our radiology literature using a residency's

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alumni network for such an endeavor. The objective of this study is to implement a formal mentorship program within an academic affiliated radiology residency by using program alumni and internal attending physicians for increased faculty engagement, improved resident morale, research opportunities, and networking for fellowship and job opportunities.

Method and Materials

Mentor and Mentee Surveys

This single institution study is comprised of residents and alumni from the academic affiliated Advocate Illinois Masonic diagnostic radiology residency program in Chicago, IL. A list of alumni contacts was obtained from the PD and updated in Microsoft Excel. Subsequently, a 10-question external survey using the qualtrics experience management platform was distributed to the 81 alumni via e-mail to gauge interest in active involvement in the residency program and labeled as the Mentor Survey. The alumni were comprised of 2 subgroups—internal attending physicians who were graduates of the residency program, labeled as internal alumni, in addition to external attending graduates who currently have no association with the program, labeled as external alumni. A third subgroup, labeled as internal attendings, was comprised of attending radiologists who work at our home institution, irrespective of being an alumnus. A similar 6 question internal survey created in Microsoft Excel was administered to the 13 radiology residents, postgraduate year 2-5, within the program and labeled as the Mentee Survey. Both the Mentor and Mentee surveys were administered in September 2017. No incentives were offered to either group. Questions within both the Mentor and Mentee Surveys were comprised of multiple choice, multiple answer, and free text question types. Overall, external alumni, internal alumni, and internal attending response rates were calculated using Microsoft Excel. Each mentee was given at least 1 external and 1 internal alumni or attending mentor. Mentors and mentees were matched based on gender, fellowship preference, practice location, and preferred mode and frequency of communication.

Prementor and Postmentor Satisfaction Survey

Finally, a separate Satisfaction Survey was administered to the 13 residents, before and after assignment and communication with their mentors, was administered in September and October 2017, respectively. The presurveys and postsurveys were comprised of the same multiple-choice questions with choices labeled from 1 (highly unsatisfactory) to 5 (highly satisfactory). *T* testing was performed with a 95% CI using MedCalc Statistical Software.

Results

Mentor and Mentee Surveys

The overall response rate for the Mentor Survey was 35% (28/81) with a positive response rate, defined as a yes response to the mentorship program, of 30% (24/81). The positive response rate group was comprised of 20 male and 4 female respondents. External and internal alumni response rates were 27% (16/59) and 45% (8/11), respectively. The internal attending response rate was 45% (10/22). The Mentee Survey resulted in 100% overall and positive response rates (13/13). A positive response was defined as a resident interested in having a mentor.

Presatisfaction and Postsatisfaction Surveys

The prementor and postmentor satisfaction survey demonstrated residents' increased satisfaction with faculty engagement ($P < 0.01$), overall resident morale ($P \leq 0.01$), research involvement (< 0.01), networking for fellowship prospects ($P \leq 0.01$), networking for job prospects ($P \leq 0.01$), and reducing stress ($P < 0.01$) after being assigned and communicating with their mentors. Increased satisfaction with resident recruitment ($P = 0.2$), improved communication skills ($P = 0.09$), and increased leadership roles ($P = 0.14$) were not statistically significant. Statistical analysis was performed using simple interactive statistical analysis programming.

Discussion

In this study, we report our institutional experience with implementing a formal radiology residency mentorship program using our alumni network in addition to internal attending physicians. Our alumni are comprised of external alumni, who are not actively involved with the residency, and internal alumni, defined as current teaching faculty who were alumni of the residency program. We combined the findings of previous studies by matching up mentees and mentors of similar professional and personal interests. Although ultimately assigned, we ensured some level of choice through alignment of the mentee and mentor interests. Our results show a total and positive mentor survey response of 35% and 30%, respectively, which is above average for tradition externally administered surveys. Our internal attending response rate of 45% is also considered above average. For reference, a prior study by Cook et al[10] shows an internal or e-mail based response rate of 25%-30%.

Our results demonstrate overall positive resident perceptions of the formalized program using our existing alumni network, both internal and external, in addition to our current faculty. We show statistically significant increased satisfaction with faculty engagement, overall morale, research involvement, networking for both fellowship and job prospects, as well as reducing stress. We show no significant changes in resident perceptions due to the formal program with respect to satisfaction with recruitment, communication skills, and leadership roles.

Using the existing alumni network can create a new avenue for attracting mentors. This can lead to multiple benefits for a residency program. Firstly, it allows residents to engage with senior attending physicians who can give a new perspective while still share the commonality and experience of being a graduate. Secondly, it can bring in alumni for possible donating to the residency for research or medical education funding. Thirdly, it can ease the burden of being the only source of mentorship for current faculty. Finally, alumni serve as an expansive network, which we have shown can be beneficial for fellowship and job prospects.

The study's main limitation is the sample size, which may restrict generalizability as a residency comprised of 13 residents is considered small. However, we believe these findings can be extrapolated to radiology residencies of most sizes and all settings, be it community based, hybrid, or academic because of our above average response rates to all questionnaire and corroboration of prior studies. This study may be especially limited in extrapolation to large programs where the nuances of the large size are not captured. Additional similar studies should be conducted at much larger residencies.

A second limitation of our study is the lack of female mentors. We were able to attract only 4 female mentors compared to 20 male counterparts. Prior studies have shown that female residents prefer to have female attending physicians as mentors. It is

therefore imperative to attract more female attending physicians amongst the mentor ranks to serve as role models for both female and male radiology residents.

Future considerations involve conducting a similar approach from the mentor's perspective. Additional benefits of a formalized program could result in an official designation or certificate for mentors, which can augment their resumes as volunteer or leadership positions. Additionally, the mentorship program could potentially extend to junior attending physicians actively involved with the program in search for senior attending guidance. Given the number of studies which show the positive impression mentorship can impart, we hope this study serves as a foundation for other residency programs in utilizing their respective alumni networks to enhance their programs.

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