Satisfiers and Hygiene Factors: Residents' Perceptions of Strengths and Limitations of Their Learning Environment

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Abstract

Background Efforts are underway to enhance learner input into the accreditation of educational programs, including residencies and fellowships.

Objectives To aggregate the perspectives of residents and fellows from a cross-section of specialties to highlight common dimensions in learners' perceptions of strengths and opportunities for improvement (OFIs) in their program and to assess whether the ACGME Resident Survey captures areas important to residents' perceptions of their learning environment.

Results The data set included 206 core and 193 subspecialty programs representing a wide range of specialties and subspecialties. Comments on strengths and OFIs addressed most of the items in the Resident Survey, with items not addressed in the survey also not represented in the ACGME requirements. The findings suggest that some program attributes are mentioned only in their absence (hygiene factors), whereas other dimensions (satisfiers), particularly quality and quantity of residents' interactions with faculty, procedural volume, and variety and didactic offerings, are critical to learners' perceptions of the quality of their learning environment. For some strengths, residents indicated their programs exceeded the ACGME standards, and for areas identified as OFIs, comments suggested programs were in compliance, but the residents desired more. Mentioned in this context were opportunities to perform research, access to board preparation courses and career counseling, and availability of new technology, including new patient care modalities.

Conclusions The findings allow insight into program attributes important to residents' perceptions of their learning environment. Programs may find the results helpful in suggesting areas for improvement in their learning environment.

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Introduction

The movement toward learner-centered education has increased interest in learner input into efforts to monitor the quality of the educational program in many areas of education,[1,2] including residency and fellowship. The Accreditation Council for Graduate Medical Education (ACGME) has used input from learners collected through site-visit interviews with peer-selected residents for more than 3 decades and, since 2004, has used survey data from residents and fellows in the accreditation of programs.[3] The questions in this survey are based on the Common Program Requirements and seek to touch areas considered salient by residents across the range of accredited programs. The survey has established reliability and validity, and negative responses to the survey are highly correlated with citations and adverse accreditation outcomes.[3]

Before 2009, the ACGME Resident Survey included a free-text field, allowing residents to share positive and negative comments about their programs. Because the ACGME field representatives considered these resident narratives helpful in focusing the site visit interviews, the ACGME piloted a process in which its site visitors solicited a confidential consensus list of program strengths and OFIs from the residents in the period immediately before a site visit.

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The first aim of this study was to highlight common dimensions in learners' perceptions of the strengths and limitations of their programs, in the hope of suggesting fruitful targets for improvement. A second aim was to assess whether all areas important to residents were reflected in the current version of the ACGME Resident Survey and whether comments addressed program attributes not captured by the Resident Survey.

Methods

Data were collected between January and June 2011 during the pilot of the use of consensus lists for programs undergoing a site visit. The ACGME field representatives requested the information through the program director, and the lists were shared directly (and confidentially) with the site visitor. Collecting the consensus lists has since been implemented for most site visits. To produce the data set, the site visitors transmitted the lists to an ACGME staff member who removed identifiers and sorted the data by specialty and residency/fellowship. Deidentification ensured that the analysis was not influenced by other information about programs or their sponsoring institutions. The total data set encompassed 206 core and 193 subspecialty programs (40 904 words devoted to program strengths and 45 887 words describing OFIs). This analysis omits comments related to the ACGME duty hour standards, which were analyzed separately to explore relationships between duty hours and other elements of the learning environment.[4]

Analysis used a grounded theory framework,[5,6] which allowed the researcher to organize the data into categories that explain common themes and potential relationships among those themes.[7] The author sorted and coded all deidentified comments to ensure thematic saturation and to avoid reaching premature conclusions.[8] Key issues emerged thematically and were not identified by the frequency of comments. Key themes are illustrated with direct comments from the residents, which are presented in smaller font. Besides the investigator, 2 staff members reviewed the themes and assigned quotes for consistency and theoretical validity.[9] A draft of the report was reviewed by 3 anonymous residents for accuracy and plausibility of the comments and linkages; their input resulted in the clarification and renaming of several categories.

Results

The results are organized around major themes that address elements of the Common Program Requirements. Some aspects of the Common Program Requirements garnered few comments. This included the sponsoring institutions and participating sites (other than attributes of the clinical learning environment discussed below), resident appointment, and faculty evaluation. In the presentation of the results, comments from residents and fellows are combined because both groups largely highlighted comparable aspects, and the term *residents* is used for both. The only area where fellows' comments differed concerned the small size of the fellow cohort and the resulting problems when clinical service volume was high, occasional difficulties with coverage, and lack of interaction with a larger group of peers. Similar comments emerged from small core programs.

Elements of the Common Program Requirements

Quality and Quantity of Interaction With Faculty When residents rated this as a strength, they commented that faculty and program leaders were excellent teachers who were invested in resident education and served as mentors and role models. They also noted that faculty took an active interest in their education and professional development and accepted residents as clinical peers and that the relationships with faculty fostered an environment of learning. Often, residents noted their feedback was taken seriously and prompted changes and improvements.

> "Faculty are enthusiastic about teaching at all levels, from medical students to senior residents; faculty members are approachable, welcoming, and have a positive attitude."

> "The residents see the program leadership, particularly our director and the department chairman, as exceptional assets. Their support of the residents, in both professional and personal issues, is robust and unfailing. Both are particularly receptive to suggestions and accommodating to requests from the residents and actively work to address each and every concern mentioned."

However, for a number of programs where faculty was mentioned as a strength, residents stressed that their positive regard did not extend to all attendings.

> "We have been able to do our rotations with the best surgeons. *With few exceptions*, they are not just leaders in their clinical area of expertise but [are] genuinely committed educators and genuinely interested in the welfare of the residents as a whole and individually. It is the faculty that made this program happen and that keep it going."

When residents mentioned faculty as an area in need of improvement, residents also generally emphasized this did not extend to *all* members of the faculty.

> "Biggest issue with faculty is variability; some are great, others are bad."

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Resources Residents' lists of program strengths rarely mentioned resources. Mentions of resources as OFIs included older facilities and equipment, resident work space, access to both care technology and computers, and lack of integration of clinical computers and the electronic medical records. Resident work space and computers were the most frequently mentioned item. Relatively few comments related to problems with call rooms or food service availability, whereas lack of nearby parking was commonly mentioned.

> "We are frustrated with the parking dilemma. We understand that construction is underway to better our hospital, but we do not feel safe parking such a distance from the hospital when working late shifts."

Clinical Volume and Variety for Resident Education Resident comments on clinical volume and variety as a strength emphasized that this attribute of their program made clinical practice interesting and exciting and allowed them to become proficient in their specialty.

> "Mix of advanced pathology, as well as bread and butter systems in place, [which] enables us to see the rarer cases done on services other than our own."

Residents in a range of specialties commented on availability of added procedural training and formal programs for teaching procedural competence as a program strength. This encompassed surgical procedures, bedside procedures in medical specialties, and a range of procedures in hospital-based specialties.

When residents indicated that patient-care experiences were an area for improvement, they noted that rotations either offered little hands-on experience or too much clinical work that did not meaningfully contribute to resident learning. For surgical programs, areas for improvement that were commonly mentioned included residents not meeting or only marginally meeting the required numbers of cases and residents expressing a desire to perform more uncomplicated "bread and butter" surgical cases.

Didactic Education Comments on didactic education as a strength focused on well-organized lectures that presented information pertinent to clinical decision making, a focus on board review, on programs ensuring protected time for didactic sessions, and on use of new technology to deliver educational materials, including recorded lectures, podcasts, and web pages. Didactics, as an area for improvement, predominantly included comments on the quality and relevance of the information presented and on patient-service demands as a barrier to attending didactic offerings, with residents indicating that conference attendance was a "low cultural priority."

Evaluations Attributes of evaluations mentioned as a strength included formats that allowed for efficient evaluations, real-time evaluations with timely feedback that allowed residents to make improvements, and clear expectations for residents set by the program, with residents evaluated against those expectations. In a few programs, residents reported the use of evaluations allowed progression to added responsibilities. The most commonly mentioned area for improvement in evaluations concerned a lack of real-time, meaningful feedback and sharing criticism late and indirectly.

> "We would like constructive criticism from the attendings in real time. We have our biannual meeting [with the program director], and we often hear comments that we did not hear during the time we spent with the attending. If we hear the criticism in real time, then we have an opportunity to make a change and have it acknowledged."

Supervision and Autonomy Residents who reported supervision as a strength commented on a balance between supervision and autonomy, with attendings gradually increasing autonomy as residents progressed through training. They also indicated that, even for more senior residents, attendings were always available, and all levels of residents felt comfortable calling and/or asking the attending staff for help/guidance. In addition, comments often went beyond mention of supervision and discussed the collegiality of senior residents and faculty and their willingness to assist more junior colleagues.

> "The program promotes and fosters a nurturing environment for coresidents to work collaboratively both within and among different classes and heeds the motto "Don't worry alone."
> "Supervisory attending physicians and senior residents are available 24 hours/7 days a week.... Coresidents are similarly supportive of each other."

When supervision was an area for improvement, residents either mentioned lack of supervision at particular training sites or reported that junior residents desired more supervision, whereas senior residents wanted more autonomy and more opportunities to provide supervision.

Other Program Attributes

Several attributes residents mentioned as strengths of their program were not addressed in the ACGME Common Program Requirements and thus not included in the Resident Survey. The most commonly mentioned items included collegiality among residents, efficiency of the clinical service, and technology used for patient care and

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teaching. Comments describe a close-knit team mentality inside and outside of the formal education program.

> " ...there is a great camaraderie and fellowship among the residents, [which] fosters a collegial, encouraging atmosphere. Professionally, residents often go out of their way to accommodate each others' needs: covering conferences and calls, readjusting schedules, helping with cases, advising, and sharing tips and tricks of the trade."

Programs with collegiality mentioned as a strength also reported on a seamless relationship and unfailing support between the different levels and appreciation for the supervision given by senior residents.

> "The attendings and residents enjoy each other's company. The importance of this is strongest in the middle of the night when the junior resident needs to call in the senior resident or when the senior resident needs to call in the attending."

Lack of efficiency in the clinical environment was frequently identified as an OFI. Residents mentioned that crowded clinical settings, halting clinical flow, and ambulatory clinics not designed for teaching presented barriers to both patient care and learning.

> "We face numerous challenges just in our clinic, let alone the overall health system in which we practice, which affect our learning and ability to practice medicine. Our clinic's flow of patients is horrendous, with many patients commonly waiting at least 30–45 minutes before seeing their physician; it's common for residents to be running an hour behind schedule. We are severely underfunded and understaffed…. Residents are forced to do enormous amounts of paperwork to refer patients for radiologic imaging or subspecialty care."

Technology in the learning environment was used for both patient care and resident learning, with residents' comments suggesting that in some programs and institutions technology permeates the learning environment.

BOX "Desirables" Commonly Mentioned by Residents

- Enhanced board preparation, including formal courses, mock orals, and review sessions
- "Procedure Rotation" or other procedural training for common bedside procedures in medical specialties
- More opportunities to do research during residency
- Participation in "immersion" experiences and electives, including international rotations
- More real-time feedback and more-specific feedback on aspects that need improving
- Modulating supervision by resident learning status and need
- Added use of surgical simulators, skills laboratories, and robotic surgery for surgical residents

Career counseling, mentoring, assistance with job searches, and coverage for employment and fellowship interviews

Residents in surgical programs also commented favorably on access to surgical simulators and skills laboratories, whereas some comments on OFIs included a lack of access to simulation and state-of-the-art robotic surgery equipment.

> "Our program has made important progress and improvement to our technologic capabilities on both campuses, which help to serve us in our education. For example, our program established a video-conferencing system to integrate across 2 campuses and also funded the development of an internal residency Wiki site, which is a source for residents to access online educational materials and to enhance collaboration."

Resident "Desires" that Exceed the ACGME Standards

Some resident comments suggested that their programs' performance went beyond the ACGME standards. Common areas were faculty development, new forms of delivering educational content, and the use of simulation. In addition, residents identified some OFIs, residents identified some areas for improvement in their programs, with the comments clearly suggesting that the programs were in compliance, but the comments indicating a desire for added training or exposure that went beyond the ACGME requirements. The BOX shows areas commonly mentioned by residents.

Particularly for resident research, comments in the strengths and OFI categories suggested that some residents received or desired opportunities to do research that went beyond the "scholarly activity" specified in the Common Program Requirements. Comments also suggested that an approach based narrowly on compliance with requirements may be viewed as suboptimal by some residents.

> "Our administration is not very supportive of our participation in research or scholarly projects being integrated into our schedules. I don't believe that they do not want to have us doing research but rather are not sure how to balance the requirements of residents as well as need for time for research. We are aware, the residents, that we have a set of requirements necessary to be met, and we know that they have to be completed. However, there have been more than a few instances when we have been inspired to pursue a project that interests us [that] quickly faltered because of resistance from administration, which seems to come from hesitation to give the extra time. So many of us have abandoned our research plans."

Some comments suggested that residents perceived elements of their learning environment were suboptimal because, to them, they appeared to be present solely to address an ACGME requirement. These comments were scattered across a wide range of attributes of the learning environment.

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> "Journal Club is a 1-hour snooze fest. I don't believe anyone recalls anything from this conference. I can barely recall anything from the papers I have presented. We appear to do this conference because we have to."

Discussion

The findings from this aggregation of the residents' perceptions on strengths and OFIs in their learning have implications for programs wishing to improve their learning environment and for the ACGME. For programs, residents' desires for more cases and experiences or for support that goes beyond the ACGME common and specialty-specific program requirements may be an area where improvement could take a program beyond minimum compliance with the standards. Residents reported they expect local feedback to their programs will result in changes. In that context, some comments identified program leaders' lack of responsiveness and unwillingness to make improvements as a source of resident frustration. The process of collecting this information from residents itself may have promoted improvement by fostering discussion. Several resident lists mentioned the positive effect of discussing program strengths and OFIs because it identified issues they had not considered or mentioned previously.

> "I'm personally not sure if anyone has ever asked the faculty whether this could be done—the first time I ever heard it brought up was during our brainstorming session for this e-mail."

Also relevant to programs that are interested in making improvement is the finding that some dimensions of the learning environment receive mostly or exclusively negative comments. They included clinical inefficiency, facilities and equipment, the few comments on call rooms and food, and the larger number of comments on parking. Virtually no positive comments focused on these aspects, suggesting that if there are no problems, residents see these areas as inherent properties of their environment and not attributes that merit specific attention. This suggests that dimensions important to residents' satisfaction may differ from attributes that caused resident dissatisfaction.

Efforts to address these causes of dissatisfaction may have the result of "getting to zero"—the offending item is removed from the list of complaints but is not viewed as a strength (P. Batalden, MD, oral communication, October 2007). Thus, addressing parking may be important to the first cohort of learners who want to have close, safe parking available. However, it is not likely to be noticed by future cohorts who experience only nearby parking. A theoretic basis for this possibility can be found in research on job satisfaction, particularly the Herzberg motivation-hygiene factor theory, which suggests that the attributes underlying employee satisfaction are different from those causing dissatisfaction.[10]

Many other elements of the clinical learning environment were consistently mentioned in positive and negative comments, suggesting they are important to residents' satisfaction with their learning environment. They included the quality and quantity of interaction with faculty, the didactic program, and the procedural and patient variety. Some comments on attributes of their learning environment were nuanced. Rather than reporting it as an unqualified strength, or one wholly in need of improvement, residents indicated that some portion was experienced as good, while other aspects were unsatisfactory or marginal.

> "Didactics are only as good as the individual who is directing them (these have ranged from appropriate, to "on the fly" from a resident who is overworked on a specific service, to fantastic from visiting professors or staff physicians)."

This analysis has several limitations. Given the size of the data set and the number of comments analyzed, it is possible that themes or issues were either missed or overemphasized. A second limitation is that the deidentified nature of data collection precluded further analysis to determine whether interviews, other site-visit findings, or subsequent citations would have corroborated learners' perceptions of strengths and OFIs in their programs.

Conclusion

The findings of this aggregation of resident comments offer insight into elements and attributes of programs that residents and fellows consider important and suggest areas for enhancing focus in the accreditation process. Resident input into program evaluation and accreditation is important to ensure that improvements address areas important to their satisfaction with the learning environment. The finding that many perceptions on attributes of the learning environment were common across specialties, institutions, and programs, and addressed elements of the ACGME Program Requirements and the Resident Survey, suggests that the accreditation process and its current data collection capture program dimensions important to residents.

For programs, discussion of program attributes commonly mentioned by the residents could enrich the annual, required process of program review and improvement. Over time, these local improvement efforts may produce "best practices" for how programs have addressed common OFIs for dissemination and adoption or adaptation by others.

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