

Residency Education

Characteristics of Effective Clinical Teachers

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Objectives: *Defining what makes an exceptional teacher is challenging. This study's objectives were to identify teaching attributes that residents and faculty value most and to determine whether the opinions of residents and faculty differed.* **Methods:** *A list of 15 teaching attributes was distributed to residents and faculty at eight family medicine residency programs. Respondents were asked to indicate the three most important and the three least important attributes of effective clinical educators.* **Results:** *Overall response rates were 58% for residents and 65% for faculty. Residents and faculty agreed that being enthusiastic and having clinical competence are important attributes and that scholarly activity is not as important. Residents felt it is important for an educator to respect their autonomy and independence as clinicians, whereas faculty members felt that this was among the least important traits. Faculty felt that serving as a role model worth emulating was important, but residents ranked this at the bottom of their list. Residents placed a higher premium on a faculty member's ability to answer questions clearly and explain difficult topics (labeled "clarity" in our study) and felt more strongly that it was important for quality educators to be readily available and able to provide a safe, nonjudgmental, nonthreatening learning environment.* **Conclusions:** *There are areas of agreement and disagreement between faculty and residents about attributes of effective clinical teachers. With the implementation of competency-based assessment systems, it will become important to determine which attributes actually promote the development of competence among learners, thereby allowing the encouragement of those attributes.*

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As more clinical teaching is being done in ambulatory settings, it is increasingly important to have effective clinical teachers.^{1,2} Better teaching should translate into better learning by physicians in training.³ This, in turn, should translate into better care for patients.

Trying to define exactly what comprises an effective clinical teacher is difficult. Even more difficult is understanding which attributes are most helpful in specific teaching situations and which attributes are not helpful. There are many characteristics and attributes that one could hypothesize are important. For example, it is certainly important to have good listening skills, but is it equally or more important to be nonjudgmental? How does scholarly activity fit into the picture?

There have been numerous attempts to describe which attributes medical students find most helpful in their clinical teachers, but not as much information is available about residency teaching.^{1,4-7} Further, there have been few recent studies comparing whether residents and faculty differ in their perception of which

attributes are the most important attributes of effective teachers.⁸

This study's primary objective was to identify which teaching attributes family medicine residents and faculty members believe are most important for effective teaching and which attributes they feel are the least important. A second objective was to compare the opinions of residents and faculty members to determine if they differ with regard to which attributes are most important for effective teaching.

Methods

Instruments

We performed a MEDLINE search to identify characteristics cited in the literature as being important for effective residency teaching. From the characteristics identified in the literature as being potentially important, a list of 15 attributes of effective teachers was compiled. This list was reviewed and agreed on via several brainstorming sessions with both faculty and residents in our program.

A survey instrument was then developed (Table 1) that contained questions asking the respondents to indicate the three most important and three least impor-

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tant of these 15 attributes. Each characteristic/attribute was followed by a short definition to ensure clear understanding of the term by all the respondents. Three versions of the survey were randomly distributed to subjects. The versions differed simply in the order in which the attributes were listed, to minimize any “order bias.”

Subjects

The survey was distributed to residents and faculty in eight family medicine residency programs across the United States. Several geographic regions were sampled, with programs being surveyed in the states of Arizona, Washington, New York, South Carolina, Minnesota, and Florida. The programs surveyed represented a variety of settings, including rural, urban, underserved, and affluent areas. Three of the programs were academic, medical school based, and five were commu-

nity based. In total, 179 residents and 117 faculty were surveyed.

Data Analysis

Descriptive statistics were generated. We then performed comparisons of the ranking of teaching attributes by residents versus faculty and further examined whether ranking differed by type of program (academic versus community based), gender, years in residency (for residents), and years in practice (for faculty). Faculty results were divided into cohorts based on 5-year intervals of length of time in practice (0–5 years, n=25; 5–10 years, n=8; 10–15 years, n=8; >15 years, n=26).

Comparisons and group outcome analysis were made using Pearsons chi-square statistics. The margins of error for the comparisons were obtained by calculating the 95% confidence intervals for the differences be-

Table 1

Survey Instrument

Are you a resident _____ Or a faculty member _____ Gender M___ F___

Year in program _____ Years in practice _____

Out of the following teacher characteristics/attributes that make an effective residency teacher:

* mark the three most important with a ✓

* mark the three least important with an X

- _____ ENTHUSIASM—Energetic and interested in teaching, positive attitude, enjoys their job, doesn’t complain
- _____ AVAILABILITY—Easily accessible, willing to come in after hours, answers pages promptly and courteously, allows adequate time for teaching, not hurried or rushed, not distracted
- _____ CLARITY—Answers questions clearly and definitively, summarizes teaching points, able to explain difficult topics
- _____ CLINICAL COMPETENCY/KNOWLEDGE BASE—Competent in patient management issues, knows the medical literature, engaged in CME
- _____ FEEDBACK SKILLS—Encourages two-way communication, provides timely positive and negative feedback
- _____ ORGANIZATIONAL SKILLS—Efficient, good at time management, respectful of residents’ time pressures and able to adjust accordingly
- _____ PROFESSIONALISM—Respects patients, residents, allied health care staff; appropriate decorum/dress
- _____ WELL PREPARED—For lectures, presentations, rounds
- _____ SCHOLARLY ACTIVITY—Active in research, many publications, nationally renowned
- _____ NONJUDGMENTAL—Provides a safe learning environment, nonthreatening, does not belittle residents, creates an atmosphere wherein residents feel safe to admit they don’t know the answer
- _____ RESPECTS RESIDENTS’ AUTONOMY/INDEPENDENCE—Treats residents as colleagues, does not “micro manage”
- _____ SINCERITY—Genuine, honest, open, up front, willing to admit when wrong or doesn’t know
- _____ LISTENING SKILLS—Listens attentively, does not interrupt, seems interested
- _____ PRACTICES EVIDENCE-BASED MEDICINE—Comfortable and confident in the principles and application of evidence-based medicine, knows where to find resources/references for evidence-based medicine
- _____ ROLE MODEL—Worth emulating in terms of interactions with patients, staff; achieves a healthy balance between professional/personal/spiritual/physical life

CME—continuing medical education

Table 2

Overall Results for Faculty and Residents Combined (n=180), Ranked by Most Important and Least Important

<i>Most Important Attributes</i>	<i>% (#) Ranking Attribute in Top Three</i>	<i>Least Important Attributes</i>	<i>% (#) Ranking Attribute in Bottom Three</i>
Clinical competency	53% (96)	Scholarly activity	84% (152)
Nonjudgmental	39% (71)	Organization skills	30% (54)
Role model	38% (69)	Well-prepared.....	24% (44)
Enthusiasm	36% (64)	Evidence-based medicine	22% (40)
Feedback skills	22% (40)	Role model.....	19% (34)
Availability	22% (40)	Respects residents' autonomy.....	19% (34)
Respects residents' autonomy.....	19% (34)	Professionalism.....	17% (30)
Clarity.....	16% (28)	Feedback skills.....	16% (29)
Sincerity.....	14% (25)	Availability.....	11% (19)
Evidence-based medicine	9% (17)	Clarity	10% (18)
Listening skills	9% (16)	Sincerity.....	9% (17)
Professionalism	8% (14)	Enthusiasm.....	9% (16)
Organization skills.....	6% (10)	Nonjudgmental	7% (13)
Well-prepared	4% (7)	Listening skills.....	6% (10)
Scholarly activity.....	0% (0)	Clinical competency	3% (6)

tween the group proportions. A *P* value of less than .05 was considered statistically significant.

Results

Response Rates

Of the eight programs participating in the initial survey distribution, seven returned their completed surveys. Of these seven programs, the response rate for residents was 104/155 or 67%, and the response rate for faculty was 76/101 or 75%. With the nonresponding program included, the response rate for residents was 104/179 or 58%, and the response rate for faculty was 76/117 or 65%. The nonresponding program was in Minnesota and was an academic medical center program. Resident response rates from the academic centers were 30/61 or 49% and from the community-based programs were 78/118 or 66%. Faculty response rates from the academic centers were 39/55 or 71% and from the community-based programs were 36/61 or 59%.

Ranking of Teaching Attributes

Table 2 lists all the attributes and the overall results for faculty and residents combined. Table 3 shows the attributes ranked as most important and least important by all respondents together and separated out as residents and faculty. Table 4 displays the data for the comparison of resident and faculty opinions.

Analysis based on type of program (academic medical centers versus community-based programs) revealed several differences. Faculty and residents at academic centers were far more likely to rank “role model” among the most important attributes compared to their coun-

Table 3

Top Three Characteristics/Bottom Three Characteristics

	<i>Attribute</i>	<i>% Chosen</i>
Combined resident and faculty results	Clinical competency	53%
	Nonjudgmental	39%
	Role model	38%
Three most important	Clinical competency	53%
	Nonjudgmental	39%
	Role model	38%
Three least important	Scholarly activity	84%
	Organization skills	30%
	Well prepared	24%
Resident results	Nonjudgmental	48%
	Clinical competency	47%
	Enthusiasm	32%
Three most important	Nonjudgmental	48%
	Clinical competency	47%
	Enthusiasm	32%
Three least important	Scholarly activity	82%
	Organization skills	28%
	Role model	26%
Faculty results	Nonjudgmental	48%
	Clinical competency	47%
	Enthusiasm	32%
Three most important	Clinical competency	62%
	Role model	50%
	Enthusiasm	41%
Three least important	Scholarly activity	88%
	Organization skills	33%
	Respects resident autonomy	29%

Table 4

Comparison of Proportions Between Resident and Faculty, Ranked by Absolute Resident-Faculty Difference of % Chosen in Top Three

	Residents (n=104) % (#)	Faculty (n=76) % (#)	Faculty- Resident Difference	P Value	95% CI, Points
Role model					
% chosen in top three.....	30% (31).....	50% (38).....	20%	.006*	(6 to 34)
% chosen in bottom three	26% (27).....	9% (7).....	-17%	.005*	(-27 to -6)
Non-judgmental					
% chosen in top three.....	48% (50).....	28% (21).....	-20%	.006*	(-34 to -6)
% chosen in bottom three	8% (8).....	7% (5).....	-1%	.78	(-9 to 8)
Respects residents' autonomy					
% chosen in top three.....	27% (28).....	8% (6).....	-19%	.001*	(-30 to -8)
% chosen in bottom three	12% (12).....	29% (22).....	17%	.003*	(6 to 30)
Clinical competency					
% chosen in top three.....	47% (49).....	62% (47).....	15%	.051	(-0 to 29)
% chosen in bottom three	3% (3).....	4% (3).....	1%	.69	(-5 to 8)
Clarity					
% chosen in top three.....	20% (21).....	9% (7).....	-11%	.045*	(-21 to -0.3)
% chosen in bottom three	11% (11).....	9% (7).....	-1%	.76	(-10 to 8)
Feedback skills					
% chosen in top three.....	18% (19).....	28% (21).....	9%	.14	(-3 to 22)
% chosen in bottom three	25% (26).....	4% (3).....	-21%	<.001*	(-31 to -11)
Enthusiasm					
% chosen in top three.....	32% (33).....	41% (31).....	9%	.21	(-5 to 23)
% chosen in bottom three	9% (9).....	9% (7).....	1%	.90	(-8 to 10)
Evidence-based medicine					
% chosen in top three.....	13% (13).....	5% (4).....	-7%	.10	(-16 to 2)
% chosen in bottom three	19% (20).....	26% (20).....	7%	.26	(-5 to 20)
Sincerity					
% chosen in top three.....	12% (12).....	17% (13).....	6%	.29	(-5 to 17)
% chosen in bottom three	9% (9).....	11% (8).....	2%	.67	(-7 to 12)
Listening skills					
% chosen in top three.....	11% (11).....	7% (5).....	-4%	.35	(-12 to 5)
% chosen in bottom three	4% (4).....	8% (6).....	4%	.24	(-3 to 13)
Professionalism					
% chosen in top three.....	7% (7).....	9% (7).....	2%	.54	(-6 to 12)
% chosen in bottom three	20% (21).....	12% (9).....	-8%	.14	(-19 to 3)
Organization skills					
% chosen in top three.....	5% (5).....	7% (5).....	2%	.61	(-5 to 10)
% chosen in bottom three	28% (29).....	33% (25).....	5%	.47	(-8 to 19)
Well-prepared					
% chosen in top three.....	5% (5).....	3% (2).....	-2%	.46	(-9 to 5)
% chosen in bottom three	25% (26).....	24% (18).....	-1%	.84	(-14 to 12)
Availability					
% chosen in top three.....	22% (23).....	22% (17).....	0%	.97	(-12 to 13)
% chosen in bottom three	5% (5).....	18% (14).....	14%	.003*	(5 to 24)
Scholarly activity					
% chosen in top three.....	0% (0).....	0% (0).....	0%	>.99	(-4 to 5)
% chosen in bottom three	82% (85).....	88% (67).....	6%	.24	(-5 to 17)

* Statistically significant differences

CI—confidence interval

terparts at community-based programs (52% versus 31%, $P=.01$). “Listening skills” was more often ranked among the least important attributes in academic medical centers compared to community-based programs (11% versus 3%, $P=.04$), while those in academic medical centers were more likely to rank “organizational skills” among the most important attributes (11% versus 3%, $P=.04$).

There were also some interesting trends noted that approached, but did not reach, statistical significance. “Enthusiasm” was ranked in the most important attributes more often at community-based programs than at academic medical centers (40% versus 27%, $P=.08$). Being nonjudgmental was more often ranked as important by individuals at community-based programs (45% versus 31%, $P=.06$) and was more often ranked

among the least important attributes by those at academic medical centers (12% versus 4%, $P=.07$).

Analysis of responses by gender differences were based on 174 responses, since six respondents did not mark their gender on the survey. When responses for residents and faculty were combined, two areas of significance were noted. First, more men than women (24% versus 12%) marked "respects residents' autonomy" among the attributes they felt to be least important ($P=.02$). Second, there was also a difference noted in respect to the attribute "nonjudgmental." Again, more men than women (11% versus 3%) ranked this attribute as being among the least important for a clinical educator. Though it did not reach statistical significance, a trend was also noted in the "role model" responses. More women than men (23% versus 14%, $P=.13$) ranked this among their least important attributes. It was also noted that more women than men (14% versus 6%, $P=.09$) ranked clarity among their list of least important attributes.

Analysis of the data based on postgraduate year (PGY) in residency program (PGY-1, $n=30$; PGY-2, $n=33$; PGY-3, $n=36$) did not include all respondents because there were nine resident responses in which the year of training was unclear. Those responses were disregarded in this analysis. Eight faculty responses did not include their years in practice. These surveys were also disregarded for this part of the analysis.

In the group comparisons for the resident cohorts, differences in attitudes toward "respects residents' autonomy" approached statistical significance ($P=.06$). Second-year residents were more likely to rank this as being important (42%) as compared to both first-year residents (27%) and third-year residents (17%). There was also a trend noted in that more first-year residents valued "enthusiasm" (43%) compared to second (21%) and third year (31%), but again this did not reach statistical significance ($P=.18$).

In the group comparisons for the faculty cohorts based on years in practice, there was only one difference that reached statistical significance. "Availability" was ranked among the least important attributes by faculty who had been in practice for 10–15 years more often than the other three cohorts (0–5 years, 8%; 5–10 years, 25%; 10–15 years, 50%; >15 years, 12%; $P=.03$).

Discussion

The Accreditation Council for Graduate Medical Education (ACGME) and other accrediting bodies strive to create a more competency-based medical education system, and academic medical centers increasingly allow for the quality of teaching when determining the academic rank of their faculty. It is important, therefore, to identify characteristics that define a quality educator.^{9,10} In this survey of resident and faculty opinions regarding effective clinical teaching attributes,

there were areas of very strong agreement as well as some interesting differences of opinion.

Both residents and faculty agree that clinical competence is among the most important attributes of an effective clinical teacher. There is also agreement that better educators are those who demonstrate enthusiasm for their educational responsibilities. Both groups also felt strongly that scholarly activity has little importance in defining an effective clinical educator, a finding consistent with the work of previous authors.^{4,8,11} Clearly, when defining those attributes that must be measured when evaluating the effectiveness of a clinical educator, clinical competence and enthusiasm must be on the list. Scholarly activity, although important for other reasons, should not be a requirement.

In contrast to these areas of agreement, there are also several areas where faculty and residents demonstrated significant levels of disagreement. Residents felt that it is important for a quality educator to respect their autonomy and independence as clinicians, whereas faculty members feel that this is one of the least important traits of an effective clinical teacher. This dichotomy of opinion is similar to an observation noted in a study more than 20 years ago.⁸ This finding in our study validates the earlier study and is an indication that this difference of opinion has withstood the passage of time.

In addition, faculty felt that serving as a role model worth emulating was important, a factor stressed by previous authors.¹³ Residents, however, did not believe that this was an important attribute and ranked it at the bottom of their list. There was not a significant difference noted either among residents when separated out by year of training or by faculty when separated out by years in practice in terms of opinions related to being a role model.

Unlike their faculty members, residents felt more strongly that it was important for quality educators to be readily available and to be able to provide a safe, nonjudgmental, nonthreatening learning environment. Residents also placed a higher premium on a faculty member's ability to answer questions clearly and explain difficult topics (labeled "clarity" in our study) than did their faculty counterparts.

Interesting differences between type of program, often reaching statistical significance, lend some strength to the premise that community-based and academic medical center-based programs may attract different sorts of faculty and residents that may value and appreciate very different teaching and learning styles. Faculty and residents at academic medical centers seem to place more importance on teachers being well-organized role models, while community-based programs may value more enthusiastic and nonjudgmental faculty. Which type of program in the end produces a better quality family physician requires further investigation.

Some gender differences were also noted. Men did not place as much importance as women did on respecting residents' autonomy. This may reflect an opinion among female physicians of the need to feel independent because of a perception among women that the field of medicine is still male dominated, or perhaps women feel this need whereas, in the same situation, men don't perceive that their autonomy is threatened. An in-depth study and analysis of gender differences was not the objective of this current study, but it does raise some interesting questions.

It is also interesting to note the trend, during the course of residency training, for second-year residents to value autonomy more than first- and third-year residents. One could explain this phenomenon by speculating that as residents learn enough to feel confident yet perhaps not enough to recognize their limitations, autonomy is desired. As residents progress through their training and approach independent practice, they have then come to realize their limitations. One would speculate that the anxiety that is commonly felt, as graduation approaches and real-life doctoring looms on the horizon, may dampen this desire for autonomy.

Among faculty physicians, it is interesting that "availability" seems to hold less importance for faculty who are 10–15 years into their practices. This would be the time when physicians may be at full momentum in their own academic and leadership pursuits. This may leave them feeling less available for residency teaching. It is reassuring and refreshing that very experienced faculty (>15 years in practice) again value availability.

Limitations

Our study has some limitations. Even with the provided definitions, there may have been confusion or differences in how different respondents interpreted our terminology. Our relatively low response rate may also be important, since there may have been a difference in the attitudes of the nonrespondents and respondents. The direction of this response bias, if it is present, is unknown.

Conclusions

We believe that the areas in which we found agreement between the opinions of residents and faculty can serve as the beginnings of a list of attributes that may

ultimately be used to define competence for clinical educators. The areas of disagreement will require further study, however, to determine which of the attributes are valid indicators of quality education skills. Future investigations should focus on outcomes data to determine which of these attributes contribute to effective education and which can be discarded or deemphasized.

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