Resident and Faculty Perceptions of Effective Clinical Teaching in Family Practice

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Increasing interest in clinical teaching has led to the realization that the unique subset of skills which characterizes effective clinical teaching needs to be identified. Such identification will lead to development of these skills and improvement in the quality of clinical teaching. Family practice faculty are vitally concerned with improving their clinical teaching skills, since clinical teaching is the core of education in family medicine and since many family physicians who become preceptors have had no formal training as teachers. In this investigation of effective clinical teaching behaviors, faculty and residents generally agree in their perceptions of the helpfulness of 58 clinical teaching behaviors. Neither group felt that emphasis on references and research is as important a factor in effective clinical teaching as are residents' active participation in the learning situation and positive preceptor attitudes toward teaching and residents. It was perceived that the ineffective clinical teacher has a negative attitude toward residents, is inaccessible, and lacks skills in providing feedback, while the effective clinical teacher has skills in two-way communication, creates an educational environment that facilitates learning, and provides constructive feedback to residents.

In the last few years there has been a surge of interest in clinical teaching, the type of teaching in which a physician preceptor and a small group of medical students or resident physicians get together, typically near hospitalized or ambulatory patients, to discuss patient care issues. There is increasing realization that whereas certain teaching behaviors may be common to several teaching settings, effective teaching in the clinical setting involves a unique subset of skills.

When a physician preceptor is supervising a resident physician who is caring for a patient, what should the preceptor do? Ignore the resident until asked for help? Observe and provide feedback? Ask questions? Merely answer questions? What teaching skills do residents and preceptors consider to be most effective?

If the special skills that make clinical teaching

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effective can be identified, then they can be developed and emphasized, and, presumably, the quality of clinical teaching will be improved.

The identification of effective clinical teaching skills is especially important to family practice departments and physicians because clinical teaching is, in fact, the core of family medicine education, both in university settings and in practice based preceptorships. Not surprisingly, many faculty in family practice departments see themselves as having higher than average interest in developing their skills. They realize the qualities that make good family physicians are best transmitted in the clinical situation. In addition, many faculty in university programs expect in their academic promotions to place heavy emphasis on the high quality of their clinical teaching.[1] Identification of clinical teaching skills is also important because practicing physicians daily join family practice programs as both paid and volunteer faculty. These family physicians, recognizing that they, like most physicians, have had no formal training as teachers increasingly are looking to faculty development programs for training in clinical teaching skills.

The goals of this study were to (1) identify the teaching behaviors that family practice faculty and residents perceived to be the most effective and the least effective, and (2) compare the ratings of faculty and residents to see if any teaching behaviors were rated significantly differently.

Background

There have been some major attempts to identify the skills that are characteristic of effective clinical teaching, notably the comprehensive review of the literature undertaken by Irby[2] and the survey of third and fourth year medical students by Stritter et al.[3]

In his review of the literature, Irby identified seven dimensions of clinical teaching: organization/clarity, group instructional skill, enthusiasm/stimulation, knowledge, clinical supervision, clinical competence, and modeling professional characteristics.[2] He created a list of 61 clinical teaching behaviors within these seven dimensions and asked a random sample of faculty, residents, and students which behaviors described their best and worst clinical teachers. He found that, based on the highest factor ratings, there were three characteristics most descriptive of the best clinical teachers: (1) *Enthusiasm/stimulation:* The best clinical teachers are enthusiastic, dynamic, enjoy teaching, and have interesting styles of presentation. (2) *Organization/clarity:* The best clinical teachers explain clearly, present material in an organized manner, summarize, emphasize what is important, and communicate what is expected to be learned. (3) *Clinical competence:* The best clinical teachers objectively define and synthesize patient problems, demonstrate skill at data gathering, use of consultants, and interpreting laboratory data, work effectively with health care team members, and maintain rapport with patients.

In their study of clinical teaching, Stritter et al[3] asked third and fourth year medical students to rate a list of clinical teaching behaviors according to which were most helpful in facilitating their clinical learning. Through a factor analysis, six dimensions of effective clinical teaching were identified. These dimensions, or factors, are presented in order from most helpful to least helpful, based on mean behavior rating:

1. Establishment of a personal environment in which the student is an active participant
2. Positive preceptor attitude toward teaching and students
3. Preceptor's emphasis on the clinical problem solving process
4. Student centered approach to instruction
5. Humanistic orientation by the preceptor
6. Emphasis on references and research

This factor analysis may have capitalized somewhat on chance variations, however, since the number of raters (265) was low relative to the number of items rated (77). Other elements that might limit the generalizability of results from this excellent study were the level of the population studied (third and fourth year medical students) and the clinical inexperience of the medical student raters in contrast to resident physicians who are responsible for patient care.

Methods

A list of 58 specific teaching behaviors was created, incorporating many of the behaviors reported by Stritter and his colleagues as well as other teaching behaviors that four family practice

Table 1. Eighteen Teaching Behaviors Identified as Most Helpful

Rank	Mean Rating*	Behavior
1	1.17	Takes time for discussion and questions
2	1.21	Is willingly accessible to residents
3	1.24	Answers questions clearly
4	1.26	Is well prepared for teaching sessions
5	1.28	Provides constructive feedback
6	1.28	Provides residents with opportunities to practice both technical and problem solving skills
7	1.30	Discusses practical applications of knowledge and skills
8	1.32	Demonstrates enthusiasm for teaching
9	1.33	Asks questions in nonthreatening manner
10	1.36	Shares his or her knowledge and experience
11	1.38	Willing to admit when he or she does not know
12	1.38	Demonstrates genuine interest in resident
13	1.41	Maintains atmosphere that encourages expression of different viewpoints
14	1.43	Demonstrates sensitivity to patient needs
15	1.44	Explains clinical problems in a comprehensible manner
16	1.47	Summarizes major points at conclusion of teaching session
17	1.48	Asks questions that stimulate problem solving
18	1.49	Explains basis for his or her actions and decisions

Note: Based on the combined rating of 58 teaching behaviors by 47 faculty and 69 residents in seven family practice residency programs *1=very helpful, 2=moderately helpful, 3=somewhat helpful, and 4=not helpful at all

faculty and fellows felt represented effective and especially ineffective teaching behaviors commonly found in family practice. The final list of clinical teaching behaviors consisted of items defined in behavioral language and related primarily to instructors' interactions with residents.

The 58 items were organized into a questionnaire in which respondents were asked to indicate whether each teaching behavior was very helpful, moderately helpful, somewhat helpful, or not helpful at all in facilitating learning, with each rating assigned a weight of 1, 2, 3, or 4, respectively. The questionnaire was mailed to faculty and residents at each of seven university affiliated family practice residency programs in Iowa. Completed questionnaires were received from 69 of 145 potential resident respondents (a 48 percent response rate) and from 47 of 102 potential faculty respondents (a 46 percent response rate).

Results

The mean ratings by residents, by faculty, and by the combined group were calculated for each item. The combined mean ratings were between 1.00 and 1.50 for 18 teaching behaviors, 19 means were between 1.51 and 2.00, 6 means were between 2.01 and 3.00, and 12 means were between 3.01 and 4.00. The 18 clinical teaching behaviors identified as most helpful are shown in Table 1.

These ratings indicate that residents and faculty

collectively perceived that the most effective clinical teacher has three broad areas of teaching skills. The first area is skill in *two-way communication*. The effective clinical teacher takes time for discussion and questions, answers questions clearly, discusses practical applications, asks questions in a nonthreatening manner, shares knowledge and experiences, presents clinical problems comprehensibly, stimulates problem solving, and explains the basis for his or her actions and decisions.

The second skill area relates to *creating an environment that facilitates learning*. The effective clinical teacher is readily accessible to residents, is enthusiastic about teaching, is willing to admit when he or she does not know, maintains an atmosphere that encourages expression of different viewpoints, and shows a genuine interest in residents.

Providing feedback is the third skill area rated characteristic of an effective clinical teacher. The teacher provides constructive feedback and compliments residents and others for good performance.

Table 2 lists the seven teaching behaviors rated lowest by the combined group of faculty and residents. (These items all had means below 3.50.) These behaviors can be grouped into three major areas. First, the ineffective clinical teacher has a *negative attitude toward residents*. He questions residents in an intimidating manner and appears to discourage resident-faculty relationships outside clinical areas.

Second, the ineffective clinical teacher *lacks skill in providing feedback*. He corrects resident's errors in front of patients, fails to recognize extra effort, and bases judgments of residents on indirect evidence.

Inaccessibility is the third characteristic of the ineffective clinical teacher. He fails to adhere to the teaching schedule and is difficult to contact for consultation after hours.

These deficiencies are readily seen to be the antitheses of the strengths of the effective clinical teacher. In their study of university teachers, Hildebrand and co-workers[4] also concluded that ineffective teachers, rather than possessing special characteristics associated with poor teaching, basically lacked the attributes commonly associated with effective teaching.

A multivariate analysis of variance of the 58 teaching behaviors indicated that there was a significant difference ($P < .03$) in the mean ratings by the faculty and by the residents. Consequently, an analysis of variance was conducted for each behavior in order to compare ratings by the two groups. Since many analyses of variance were performed, only highly significant results ($P < .001$) will be commented upon.

Table 2. Seven Teaching Behaviors Identified as Least Helpful

Rank	Behavior
58	Questions residents in intimidating manner
57	Corrects resident's errors in front of patients
56	Appears to discourage resident/faculty relationships outside clinical areas
55	Fails to adhere to teaching schedule
54	Is difficult to summon for consultation after hours
53	Bases judgments of residents on indirect evidence
52	Fails to recognize extra effort

Note: Based on combined ratings of 58 teaching behaviors by 47 faculty and 69 residents in seven family practice residency programs

For 52 of the 58 behaviors, the faculty and residents were essentially in agreement; the differences in the mean ratings were not statistically significant. The six behaviors with mean ratings differing significantly ($P < .001$) are shown in Table 3. The greatest discrepancy (0.90) between means was for the behavior "leaves resident alone until asked to staff." Faculty saw this an an ineffective (and perhaps inappropriate) teaching behavior; residents rated the behavior as more helpful. The other five discrepancies represented behaviors that faculty felt were very helpful and that residents saw as only moderately helpful. An analysis of the resident responses by level of residency training identified no significant differences in the ratings for any behaviors.

Discussion

Generally speaking, this study of family practice residents and faculty corroborated the Stritter study of medical students in that it identified many similarities and provided few contrasts. Since

Table 3. Items on Which Faculty and Resident Ratings Differ Significantly

Item	Faculty Mean (n=47)	Resident Mean (n=69)	Difference in Means
Leaves resident alone until asked to staff	3.28*	2.38	+0.90
Summarizes major points at the conclusion of the teaching session	1.21*	1.58	−0.37
Inspires enthusiasm about his or her content area	1.30*	1.63	−0.33
Demonstrates sensitivity to patient needs	1.15*	1.55	−0.40
Compliments residents for good performance	1.21*	1.62	−0.41
Stresses social and psychological aspects of illness	1.53*	2.09	−0.56

Note: 1=very helpful, 2=moderately helpful, 3=somewhat helpful, and 4=not helpful at all
*P<.001

some teaching behaviors were common to both studies, it was possible to estimate means from the family practice study for the Stritter study's six dimensions of effective clinical teaching. Based on estimated mean behavior ratings, the family practice "factors" had the following order (from most important to least important):

1. Establishment of a personal environment in which the resident is an active participant
2. Positive preceptor attitude toward teaching and residents
3. Humanistic orientation by the preceptor
4. Preceptor's emphasis on the clinical problem solving process
5. Resident centered approach to instruction
6. Emphasis on references and research

The estimated family practice mean factor ratings had almost the same relative order as those found reported in the Stritter study. Thus, even though residents and physicians are far more independent than are medical students as care providers, residents demonstrated a strong desire for active participation (Stritter's factor 1) and positive preceptor attitudes (factor 2). The relatively low interest in references and research (factor 6) was also confirmed. In this study, the factor that Stritter and his colleagues labeled "humanistic orientation" would be ranked third, right after positive preceptor attitudes.

Basically, the two studies have concurred on what skills and behaviors are characteristic of effective clinical teaching. In summary, the family practice residents and faculty surveyed in this study essentially agree in their perceptions of the helpfulness of 58 clinical teaching behaviors. They perceived that the ineffective clinical teacher has a negative attitude toward residents, lacks skills in providing feedback, and is inaccessible. Conversely, they perceived that the effective clinical teacher has skills in two-way communication, creates an educational environment that facilitates learning, and provides constructive feedback to residents. Therefore, faculty development workshops in clinical teaching can try to develop or enhance behaviors and techniques in these highly regarded skill areas with some confidence that they are concentrating on skills that both faculty and residents perceive as helpful.

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