SHORT REPORT

Perspectives of residents, students and faculty about residents as teachers at a University Hospital in Karachi

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Abstract

This was a cross sectional study, conducted at the Aga Khan University, Karachi, from December 2018 to December 2019, to determine the residents' performance as teachers and understand the difficulties they faced. Anonymous feedback was obtained from students (n=200) to rate the teaching skills of residents in the paediatric department. The residents (n=60) also filled out an anonymous survey to assess their teaching performance and barriers to teaching. Furthermore, the faculty rated the residents' teaching abilities on a 5-point scale. A total of 145 (98.7%) students considered teaching as an important role of the residents. Ten (40%) residents identified themselves as beginners in teaching. The main barriers were time limitation (n=19, 76%), critical patients (n=3, 12%) and lack of appropriate skills (n=3, 12%).

Keywords: Residency, Medical Students, Teaching, Faculty.

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Introduction

Residents have many responsibilities, not only in their role as medical professionals but also in their role as professional teachers.[1] They have the opportunity to become efficient teachers for medical students, as they are well-positioned to understand the learning needs of these students.[2] Multiple studies have shown that medical students not only obtain most of their clinical knowledge and professional skills from residents, but are also greatly influenced in pursuing a career in the same specialty because of the residents who serve as role models.[3,4] This is mainly because residents spend up to a quarter of their time in the hospital in teaching activities, and, in most disciplines, they spend more clinical time with the students than the faculty does.[5] This might be why medical students see residents as role models and prefer them to be their source of education and guidance in clinical settings. In addition, the residents also enjoy teaching medical students and would prefer to teach more, as they feel that it is beneficial in enhancing their own medical knowledge, communication skills, and, in turn, better patient care and clinical outcomes, and have resulted in greater job satisfaction.[6]

Irrespective of how teaching is advantageous to both students and residents, this competency is mostly acquired passively as they progress through their academic years. Different academic hospitals approach the development of teaching skills differently. The majority provide a one-time lecture or workshop aimed to introduce the residents to the concept of teaching, as done in our institution.[7]

Studies in Pakistan have also shown suboptimal teaching skills amongst residents as rated by the final year medical students.[8] In order to improve the quality of the training programme, this paper assesses the residents' performance as teachers. The rationale behind this is to assess the quality of the residency programme, in terms of the development of teaching skills of the resident trainees in the paediatric residency programme at the Aga Khan University Hospital, Karachi, Pakistan.

Methods

By design it was a cross-sectional study comprising an anonymous online survey and a retrospective assessment of student and faculty feedback. Exemption from Ethical Review Committee of the Aga Khan University was obtained before conducting the study.

The subjects of this study comprised all the fourth-year medical students (n=200) who rotated through an eight-week paediatric clerkship during January 2017 to December 2018 and all the residents (n=60) working in the paediatric residency programme at the Aga Khan University Hospital during the same period. The faculty feedback was also reviewed, specifically for teaching competency and assessment of giving feedback of the paediatric residents.

An anonymous online survey questionnaire in a study done by Wachtel et al was adapted for obtaining the residents' feedback.[9] The survey comprised eleven questions and data was collected using Google Forms. Only basic demographic information such as age, sex, and year of training was obtained, and no identifiable information was collected. Opinions of the medical students were taken in the form of a rotation feedback

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form also on Google document. The form was sent by the rotation coordinator. This feedback form was also anonymous and voluntary.

Faculty evaluation score was obtained only for the items which were focused on the teaching competency of paediatrics residents. The faculty evaluation was based on 5-point scale, ranging from 1=unsatisfactory to 5=outstanding. Two educational items that are part of 'scholarly activities', include assessment of teaching juniors and assessment of giving feedback. The scores for these two items were obtained from the department records, with the help of the programme assistant who codified the data as resident 1, 2, 3 and so on, instead of using any personal identification.

Results

A total of 200 fourth-year medical students (from two batches) and 60 paediatric residents (from four batches) were invited to participate in this study.

Student survey: Among the student population, 147 students completed the survey (overall response rate of 73.5%), out of whom 87 (59.2%) were females and 60 (40.8%) were males. The internal consistency (Cronbach's alpha) of the items in the tool was found to be 0.795.

Most of the students [145 (98.7%)] acknowledged the importance of the presence of teaching attributes among trainee residents. Sixty-eight (46%) students rated it as one of the most essential skills required in the residents. As shown in Table-1, in order of highest to lowest ranking of resident skills, clinical knowledge was scored 'good' by 120 (81.6%) students; clinical skills were scored 'good' by 108 (73.5%) students; interpersonal skills were scored 'good' by 100 (68.0%) students; and teaching skills were scored 'good' by 98 (66.7%) students.

The medical students appraised the residents' interest in teaching students. Eighty-two (56%) thought the residents to be 'often' interested in teaching medical students and 30 (20%) considered them to be 'always' interested in teaching. One hundred and sixteen (79%) medical students strongly considered the need for formal training for residents related to teaching.

The overall bedside experience was termed 'good' by 96 (65%) students, while 17 (12%) quoted it as 'poor'. There was a strong correlation between the resident's clinical knowledge and overall bedside experience (r =0.687) and also between the resident's teaching skills and overall bedside experience (r =0.544). The study reported only moderate correlation between the residents' clinical and interpersonal skills with the overall bedside experience i.e. (r=0.479) and (r=0.425), respectively (Table-1).

Resident survey: Out of a total of 60 residents, 25 agreed to participate in the survey from different levels of training (PG 1=7, PG 2=7, PG 3=6, PG 4=5). The overall response rate was 41.7% and the reliability coefficient for the questionnaire was 0.609.

Sixteen (64%) residents were certain that they had a student with them for less than an hour a day, while only 9 (36%) reported that students were with them for 1-2 hours per day. Ten (40%) residents estimated that they spend less than 10 minutes in teaching students. There was no significant correlation between the time a resident spent with a student versus the time spent on teaching (r =0.067).

Eight (32%) trainees believed that they learn how to teach through ongoing training, 7(28%) stated that they received training only once, while 3 (12%) denied having any formal training. The training, if received, was based on lecture [5 (20%)], workshop [3 (12%)] and problem-based study [2 (8%)] (Table-2). A majority of the residents, i.e. 22 (88%), showed interest in participating in a teaching programme to learn the skills required to become better teachers.

Almost all the trainees had high-to-moderate levels of comfortability in teaching medical students [24 (96%)]. Fifteen (60%) residents recognised themselves as 'Competent' teachers and the remaining 10 (40%) recognised themselves as 'Beginners'. Despite the majority of them feeling competent in their proficiency as teachers, not as many felt confident about their proficiency in giving feedback. As shown in Table-3, a

Table-1: Residents' skills and bedside experience rated by medical students.

Residents' attributes	Students' Responses (Total n=147)				P Value
	Very good n (%)	Good n (%)	Poor n (%)	Very Poor n (%)	
Clinical Knowledge	22 (15.0)	120 (81.6)	2 (1.4)	3 (2.0)	0.687
Clinical Skills	29 (19.7)	108 (73.5)	7 (4.8)	3 (2.0)	0.479
Interpersonal skills	24 (16.3)	100 (68.0)	19 (12.9)	4 (2.7)	0.425
Teaching skills	18 (12.2)	98 (66.7)	26 (17.7)	5 (3.4)	0.544
Bedside experience	31 (21.1)	96 (65.3)	17 (11.6)	3 (2.0)	NA

Table-2: Prior training received to teach.

Prior formal training	Residents' responses (total n=25)	
	Number	Percentage (%)
No training	11	44.0
Lecture	5	20.0
Workshop	3	12.0
Problem-based learning	2	8.0
Other	4	16.0

Table-3: Residents' proficiency in teaching and giving feedback.

Residents' perception of their proficiency	Resident responses n (%)		
	Beginner	Competent	Proficient
Teaching	24 (40)	36 (60)	0.0
Giving feedback	36 (60)	17 (28)	7 (12)

Table-4: Faculty evaluation of residents.

Level of residency	Teaching Juniors Mean (SD)	Giving feedback Mean (SD)
PG 1	3.28 (0.531)	3.28 (0.531)
PG 2	3.61 (0.623)	3.59 (0.626)
PG 3	3.80 (0.588)	3.80 (0.580)
PG 4	3.97 (0.627)	3.92 (0.622)

greater number of residents [15 (60%)] selected 'beginner' for giving feedback. There was a good correlation between the residents' proficiency in giving feedback and proficiency to teach (r =0.537). Furthermore, there was a negative correlation shown between the level of residency and the comfort to teach (r =-0.126).

The main barriers to teaching were reported to be time limitation (n=3, 76%), critical patients (n=3, 12%) and lack of appropriate skills (n=3, 12%).

Finally, the survey concluded with suggestions to improve the training programme in order to facilitate them to be effective teachers. Residents' responses included: the need for formal teaching sessions scheduled with the medical students (n=6, 24%), assigning students topics to discuss (n= 4, 16%), student attendance and interaction in rounds and on-call (n=5, 20%), residents' input included in student evaluations (n=1, 4%), and training the residents to be better teachers (n=1, 4%).

Faculty Survey: The faculty data obtained from the records showed the assessment of residents according to their level of residency training. The faculty believed senior residents to be better suited for teaching (3.97 ± 0.63) than the junior residents (3.28 ± 0.53). They also perceived the senior residents to have a better ability to give feedback (3.92 ± 0.622). Overall, a similar trend was seen between the residents' proficiency to teach and to give feedback, in every level of residency training (Table-4).

Discussion

There has been an increased interest in pursuing the need for training of residents as teachers in medicine, and our study has further emphasised this goal. With input received from both medical students and paediatric residents at a tertiary-care hospital, we were able to investigate the role of residents as teachers and the obstacles they face in teaching.

Based on our study data, the majority of students agreed with the importance of residents as teachers, confirming that students are dependent on them for their medical education. This outcome was consistent with previous studies showing that students view residents as figures who share their difficulties in a hospital environment and provide a significant amount of valuable knowledge.[10] Our study further demonstrated a positive relationship between teaching by residents and students' overall bedside experience, suggesting that good teaching is necessary for students to gain effective knowledge in clinical rotations.

Like the students, the residents in our study also believed it was their vital duty to be good teachers. By teaching medical students, they improve their own theoretical knowledge and clinical competence, overall having a synergistic effect in the medical education system.[11] Most residents in this study were spending less than one hour a day with medical students, hence, the shorter duration spent in teaching activities as well. However, they reported that the main reason for this was their other time-consuming responsibilities around the hospital. The residents in our study suggested that more sessions should be scheduled with the students, to increase time spent with them in order to teach them effectively; however, our study did not correlate the total time spent with the students and the time spent in teaching.

It is worth noting that a moderate to high level of comfort in teaching was seen in the residents. One possible explanation could be that the residents have a tendency of developing a friendship with medical students; hence, the greater levels of comfort in teaching them. A slight negative correlation was also observed between the level of residency and the comfort in teaching, which could possibly mean that the comfort of teaching decreases as a junior resident gets promoted to the senior level. A study from Brazil explains that residents are close to students in age and in interest, so they feel more satisfied with their work while teaching the students.[6] But in contrast to this, a literature review done on 'resident-as-teacher curricula' stated that as residents progress in their training years, they gain teaching experience and may report higher levels of comfort with teaching.[6] Interestingly, this view was reinforced by our data collected from the faculty. It showed that they believed residents to become better teachers as they went up the residency ladder. A greater number of participants would be required to have effective analysis of the relationship between the level of training and comfort in teaching.

In contrast to their levels of comfort, the residents' perception of proficiency to teach and to give feedback scored lower. An overlap was also noted between the proficiency to teach and the proficiency to give feedback. The ability to give feedback is linked with the ability to teach.[12] In our study data, about half the residents claimed to have received some sort of informal training in the form of lectures or workshops. But it would be worth asking if there had been an authentic training course instead of an informal method, would it have improved their perception of proficiency to teach and give feedback to medical students.

Residents showed the desire to participate in a teaching programme if it were made available. This was consistent with other studies done on the residents' perception of their need to be better teachers.[6] Residency programmes in Pakistan have not been able to institute a resident-as-teacher curriculum as seen in our institution. Given the positive effects of the medical education of students and residents, one might argue that all residency programmes should instigate resident-as-teacher training. However, a dense literature review revealed that several hurdles were faced when implementing such a course in a residency programme was tried. Time-division between education and patient care is the biggest hurdle, as mentioned by the residents in our study as well.[10] There is a need for further research on the methods of including resident-as-teachers training into residency programmes, maintaining a balance between teaching, and other resident responsibilities.

Limitations

The results of this study may not be generalisable, as the data is limited to one paediatric residency programme. However, the data is consistent with results from earlier studies of residents from other specialties as well. The sample size was relatively small, with a lower response rate from residents and was focused on their perceptions only.

Conclusion

Residents, medical students, and the faculty correspond that there is a lack of teaching skills among residents. Providing residents with the skills to teach effectively should be a component of residency education. However, there are many barriers to implementing such training.

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