

EVALUATION OF PEDIATRIC TRAINING OF INTERNS IN A TEACHING HOSPITAL

B. Rath

ABSTRACT

This study was undertaken in a teaching hospital with residency system to evaluate Pediatric teaching of interns admitted to MBBS course (using the questionnaire method) and to find out ways to improve the existing system. It was seen that the present system increased the Pediatric knowledge of interns significantly ($p < 0.001$). The study highlights what the contents of the course should be from the learners' point of view, the hindrances to their learning and some suggestions to improve training in future.

Key words: Medical Education, Interns.

From the Department of Pediatrics, Maulana Azad Medical College, New Delhi 110 001.

Reprint requests: Dr. B. Rath, B-89, Sector 26, Noida 201 301.

Received for publication: November 22, 1991;

Accepted: April 6, 1992

As per recommendations of the Medical Council of India(1), the MBBS interns spend one month in Pediatrics in our hospital. It is presumed that their training is complete. However, there has not been any systematic evaluation of the present system from the learner's point of view. Hence, the present study was undertaken: (i) to assess whether the present system improves Pediatric knowledge of interns; (ii) to understand the learners view regarding contents of the course; (iii) to identify factors hindering/facilitating their learning process; and (iv) to invite suggestions from the learners regarding ways to improve training of future batches.

Material and Methods

The study was conducted in the Department of Pediatrics of Maulana Azad Medical College, New Delhi, between October, 1990 to February, 1991 by using the questionnaire method. Interns posted to Pediatrics were asked to answer the questionnaire in specified proformae once at the beginning of the posting and once at the end.

The pre-test questionnaire contained 3 parts: *Part I*—a few personal particulars; *Part II*—two open ended questions regarding 10 common Pediatric problems the interns wished to learn, 3 common procedures they wished to master during their posting; and *Part III*—60 MCQs of (a) Choose the best answer, (b) True or false, (c) Fill in the blanks—each having one mark, and (d) Five problem solving type each having five marks. The questions were basic, practical oriented, and informative and were suitably chosen to test their

knowledge in common Pediatric problems such as growth and development, nutritional requirements, deficiency syndromes, immunization and common pediatric diseases.

The post-test questionnaire administered during the last 2-3 days of their posting had 2 parts. *Part I*—open ended questions namely; (1) Did they feel the duration of posting adequate, if not what should be an ideal period; (2) Factors that hindered their learning; (3) Factors that facilitated their learning; and (4) What measures should be undertaken to improve training. *Part II* of post-test contained the same MCQs which were administered to them in the pre-test. Evaluation of MCQs was done by awarding marks to each answer. The difference in total scores of Pre and Post tests reflected the knowledge they acquired during their posting. Paired 't' test was used to test significance of the difference in marks. Of 60 interns posted, 52 participated in pre-test, 57 in post-test and 49 in both. Hence, answer sheets of these 49 interns comprised the study material.

Results

Of the 49 interns, 40 were of regular batch and 9 of supplementary batch. Sixteen were interested, 28 were not interested and 5 were indecisive regarding residency in Pediatrics.

Subjects to be Learnt: All the interns were asked to mention 10 subjects they wished to learn during their posting. Twenty five gave a complete range whereas 24 gave 6-7 options (*Table I*). They were asked to enlist 3 procedures which they would like to master during their posting. The responses are given in *Table II*.

Period of Posting: Of 49 interns, 26 (53.1%) were satisfied with the present 4

weeks posting, while 14 (28.6%) wished that the period be increased to 6-8 weeks, 7 (14.3%) wished duration be decreased to 15 days. Four of them belonged to one particular Unit.

Test Performance: The maximum possible score for MCQs was 75. The mean pretest score was 37.8 ± 8.24 (range being 18.4-57.6). Of 49, 17 (34.7%) scored less than 50% marks. The average post-test score increased to 44.2 ± 9.82 (range being 24.6-70.2) which was statistically significant ($p < 0.001$). In the post-test, 8 out of 49 (16.3%) scored less than 50% marks. More than 60% of marks in post-test were secured by 26/49 (53.1%) of the interns compared to 15/49 (30.6%) in pretest. Unfortunately, 15 interns secured less marks in post-test as compared to pre-test ranging between 0.6-21.4 (mean 5.6 ± 4.95).

Factors Hindering and Facilitating Learning Process: Factors hindering learning process of interns is depicted in *Table III* and factors facilitating are given in *Table IV*. Seniors have been helpful and facilitated learning of 28/49 (57.1%) interns whereas 16 (32.7%) believed them to be unhelpful. Unfortunately, the word 'Seniors' has not been qualified. Most learning of interns has been by self effort.

Suggestions: The suggestions made by interns for better training are shown in *Table V*. Eighteen (36.7%) interns regretted that in the present set up interns are not being given their due importance as responsible persons but are being considered as mere helpers. It is noteworthy that 40/49 (81.6%) interns have demanded more involvement in patient care. They wanted to be allotted beds at par with other junior residents, present cases and wished that ward rounds should involve interns. Reduction in total number of work-

TABLE I—Subjects the Interns Wished to Learn

Sl. No.	Topics/Systems	Subgroup	Freq- uency	Cum. freq.	%
1.	Common pediatric problems	Ped. emergencies	11		
		Psychological	7		
		Anemia	6		
		Congenital	5		
		Jaundice, Pyrexia	6 (3 each)		
		All others	14	46	11.3
2.	Cardio-vascular system	Congenital heart disease	18		
		Rheumatic heart disease	16		
		Unspecified	10	44	10.8
3.	Central nervous system	Convulsion	16		
		Meningitis	16		
		Others	8	40	9.9
4.	Infective disorders	Common infections unspecified	11		
		Koch's	10		
		Septicemia/Tetanus (4 each)	8		
		Measles	3		
		Others	7	39	9.6
5.	Respiratory system	Pneumonias	16		
		Unspecified	13		
		Bronchial asthma	5		
		URI	5	37	9.1
6.	Diarrhea & dehydration			30	7.4
7.	PEM/Malnutrition/ failure to thrive			27	6.7
8.	Genitourinary	Nephrotic syndrome	17		
		Others	5	22	5.4
9.	Fluid & electrolyte balance			19	4.7
10.	Nutrition & vitamin deficiencies			19	4.7
11.	Immunization			12	3.0
12.	Hematological problems	Thalassemia	7		
		Others	5	12	3.0
13.	Normal growth & development			11	2.7
14.	Drugs & dosage			10	2.5
15.	Malignancies			10	2.5
16.	Newborns & their problems			8	2.0
17.	Others			20	
Total				406	

TABLE II—Procedures the Interns Wished to Learn

S.No.	Name	Frequency of response	%
1.	Lumbar puncture	36	25.9
2.	Putting IV lines	29	20.9
3.	Bone marrow aspiration/biopsy	19	13.7
4.	Liver biopsy	13	9.4
5.	Intubation/cardiopulmonary resuscitation	11	7.9
6.	Thoracentesis	8	5.8
7.	Blood sampling/femoral puncture	7	5.0
8.	Venous cut down	4	2.9
9.	Nasogastric intubation	3	2.1
10.	CVP monitoring, kidney biopsy, first aid	6 (2 each)	4.3
11.	Others	3	2.1
Total		139	

TABLE III—Factors Which Hindered Learning

S.No.	Factors	Response		%
		Subtotal	Total	
1.	Improper use of timing			
	(i) Due to lack of orderlies interns were made to do orderlies, paramedical staff job; carrying samples; escorting patients to laboratories for investigations; running about for collection of reports, etc.	12		
	(ii) Wastage of time in blood sampling, filling up forms, writing discharge slips, etc.	7		
	(iii) More clerical job	7	28	29.2
2.	Inadequate teaching			
	(i) No discussion during ward rounds	8		
	(ii) No orientation class for interns	6		
	(iii) Poor basic Pediatric knowledge	3	17	17.7
3.	Hostile unhelpful seniors not interested in teaching and unwilling to entrust responsibility	16	16.6	
4.	Overwork: Too many 24 hours duties hence overburdened with work, no time to learn	15	15.6	
5.	Preoccupation with forthcoming examination such as PG entrance or military examination, etc.	10	10.4	
Total		86		

TABLE IV—Factors Which Facilitated Learning of Interns

S. No.	Factors	Response		%
		Subtotal	Total	
1.	Self effort			
	Doing emergency duties and running OPD	12		
	Writing history	6		
	Seeing varieties of patients	5		
	Doing procedures self	5		
		4	32	39.5
2.	Good helpful seniors. Teaching by seniors		28	34.6
3.	Ward rounds		12	14.8
4.	Conducive atmosphere	5	5	6.2
5.	Others	4	4	4.9
	Total	81		

TABLE V—Suggestions to Improve Training of Future Batches of Interns

S. No.	Suggestions	Response		%
		Subtotal	Total	
1.	Entrust more responsibility and involvement: Interns not to be considered as mere helpers, should be given more responsibility They should be allotted beds and present cases		40	42.1
2.	Improve training by: (i) Organised teaching (classes, involving interns in ward rounds) (ii) Increasing duration of posting	19	28	29.5
3.	Reduce Workload Total no. of working hours should be reduced from the existing 60-70 hours/week		15	15.8
4.	Others which include suggestions for improving pediatric teaching in undergraduate course and increase marks in pediatrics in final MBBS examinations		12	12.6
	Total		95	

ing hours, preliminary orientation as well as teaching classes for interns and improvement of training either by increasing

the duration of posting or better organizations are other important suggestions to improve training.

Discussion

The Department of Pediatrics in Maulana Azad Medical College has 6 general pediatric wards, each ward having approximately 30 beds. There are once a week admissions in each unit which is being looked after by two consultants (Pediatricians), two post Doctoral senior residents, 3 post graduates and 2-3 house physicians. Two interns are posted to each ward for a period of one month. During their posting the interns are taught and trained by the seniors. The Department has no provision for formal teaching classes for interns though there are formal classes for other junior residents and final year under-graduate students. Interns join Pediatrics with an undergraduate pediatric posting of about 10 weeks in three years. During their undergraduate posting they are exposed very little to emergency Pediatrics and do not follow up cases. In the final MBBS theory examination 40/160 marks in medicine are allotted to Pediatrics which does not give much incentive to read this subject. Thus, interns come to Pediatrics inadequately prepared to take up responsibility in this speciality. Since they form the lowest rank in the hierarchy, most orders are passed on to them simply to be carried out. The other junior residents being better knowledgeable are expected to take the upper hand.

As highlighted in *Table I*, interns wished to learn about the Pediatric problems commonly encountered in the ward. Their eagerness to learn more of systemic Pediatrics rather than community Pediatrics is a reflection of the present day trend. So far as duration of posting is concerned, the group wanting a longer period wished to have a better exposure. Further discussion with interns who wished a shorter duration of posting revealed that they were an

unhappy disgruntled group for whom this was but a normal reaction.

A significant increase in post-test score as compared to pre-test score is gratifying. Even though 26/49 (53.1%) of the interns were able to secure more than 60% marks in post-test, it is no consolation as 15/49 (30.6%) had a post-test score less than their pre-test one meaning thereby that they did not derive any benefit from the posting. This is of serious concern. This group cannot be ignored on the pretext of "not interested in Pediatrics" as 40% of them were interested in residency in Pediatrics, another 14% being indecisive

It is apparent that atleast some of the hindrances could be removed without any extra expenditure and effort, prominent being—change of attitudes of seniors towards the interns. A warm welcome, friendly atmosphere and formal introduction to other members with whom they are going to work will be conducive to learning and provide a lot of confidence and moral strength. The teaching of interns can be improved by organizing teaching classes for them and involving them in ward rounds. However, their preoccupation with forthcoming examination cannot be helped.

The following suggestions seem to be practical and reasonable: (i) It is a healthy sign that they have demanded more involvement in patient care. Presentation of cases and participation in discussion will not only increase their knowledge but also give the postgraduates more time to read. (ii) Their demand to reduce working hours should be considered sympathetically and the duty hours should be so adjusted that the interns do not feel overburdened with work. (iii) Orientation and teaching classes for interns is a very genuine demand. This is an area where the institution can gain a

lot with little expenditure and effort. (iv) Even though the feasibility of increasing duration of pediatric posting for interns can be debated, better training by improving present organizational set up seems to be a reasonable and practical suggestion. (v) Last but not the least, is the suggestion to improve pediatric teaching in undergraduate course, and to increase marks in the final MBBS examination for Pediatrics which indirectly will prompt and compel the undergraduates to learn more of Pediatrics. These should not be overlooked as these will go a long way to remove the cumulative inadequacy in Pediatric training. In this regard, a block posting in Pediatrics will be quite useful.

Bhatnagar(2) has regretted that internship in our country has been a source of utter disappointment, the reasons being lack of clarity of the learning objectives, absence of examinations, poor enforcement of discipline, supervision deficiencies, *etc.* In his study the teachers felt that since there was no examination during internship, there was no incentive for learning

which bred to gross apathy and irregularity on the part of interns. He has strongly advocated for some sort of evaluation after internship on line of National Board Examination of USA. His suggestions seem valuable even though little attention has been paid to them.

Acknowledgements

The author wishes to thank Prof. D.S. Agarwal, Dean, and Prof. R.K. Puri, Professor and Head of Pediatrics of Maulana Azad Medical College for their permission to carry out this work and Prof. S.P. Mehta, Director Professor of Medical Education, Madula Azad Medical College, for permission to publish this work.

REFERENCES

1. Medical Council of India. Recommendation on Graduate Medical Education, 1981.
2. Bhatnagar BNS. Studies on the Internship Programme. Indian J Med Edu 1990, 29: 12-32.