SHORT REPORT

Evaluation of educational environment for postgraduate residents using Post Graduate Hospital Educational Environment Measure

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Abstract

The objective of this study was to determine the level of educational environment among residents working in our hospital using Post graduate hospital educational environment measure (PHEEM). This cross-sectional study was conducted at services hospital, Lahore. All the Post-graduate residents (PGR's) working at Services hospital, Lahore were asked to fill a proforma having 2 parts: Bio-data and PHEEM. Out of 110 PGR's, 87 completed questionnaires, of which majority labelled education environment into level 3 (71%). Overall mean PHEEM score calculated was 90.49 ±15.44. Maximum score was found for teaching subscale followed by autonomy and social support subscale. Highest mean score was found for neurology (104) department and lowest for anaesthesia (72 ± 9.19). General surgery, internal medicine, paediatric medicine and gynaecology gave mean score of 90, 92, 93 and 89 respectively. There was non-significant difference in terms of PHEEM score when stratified for gender, year of residency and marital status.

Keywords: Education, Environment, Postgraduate residents, PHEEM.

Introduction

Educational environment is important to be determined for the hospital in order to assess quality of medical education and the post-graduate residents (PGR's) who are being trained in that hospital.[1-3] As by knowing the level of educational environment, anyone may predict the quality of PGR's and the future specialists, it is producing. So an institution may better proceed to take certain measures to improve the quality as well the environment for its residents and students once it knows the current status of its educational environment.[4-6] The objective of this study was to determine the level of education environment for PGR's using Postgraduate Hospital Educational Environment Measure (PHEEM) in our hospital.

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Methods and Results

This study was conducted at Services Institute of Medical Sciences/ Services Hospital, Lahore. It was an educational research having cross-sectional design. After approval from ethical review board, this study was conducted from January, 2017 to March 2017. We used PHEEM to assess education environment for residents. A total of 110 questionnaires were distributed among residents from which 92 residents completed the questionnaire. Of these, 5 questionnaires were incomplete, so they were excluded from this study. This questionnaire was anonymous and consisted of two portions: 1) Biodata, 2) Tool for PHEEM. A permission from the author of PHEEM was sought before starting this study.[7] PHEEM is a validated tool which has 40 items and they are answered on a 5 point Likert scale from strongly agree to strongly disagree. Maximum score could be 160 and four global subscales are made according to the score being 0-40 as very poor; 41-80 as plenty of problems; 81-120 as more positive than negative but room for improvement and 121-160 as excellent. The higher the PHEEM score is, better is the environment. There are three subscales of the PHEEM: teaching, autonomy and social support. All the data were analyzed by using SPSS version 20. The quantitave variables like age and scores of PHEEM were presented as mean ± SD. Qualitative variables like gender and other demographic variables were presented as frequency and percentages. The score for PHEEM was compared by using student's t-test between residents for gender, different years of residency and departments of residency. P-value $\leq$ 0.05 was considered as significant. A total of 87 residents were included in this study. The mean age of residents was found as 27.87 ± 2.89 years. Of 87 respondents, 58 (66.7%) were male while 29 respondents (33.3%) were female. According to year of training, almost equal number were in first 4 years of residency, except only 4 residents being in subspecialty and year 5. Most of our respondents were from major specialities including general surgery,

Table-1: Questions asked in PHEEM questionnaire and their mean score.

		Mean	Std. Deviation
1	I have a contract of employment that provides information about hours of work	1.4253	1.27254
2	My clinical teachers set clear expectations	2.5632	.84497
3	I have protected educational time in this post	1.9080	1.09579
4	I had an informative induction programme	2.2414	1.09932
5	I have the appropriate level of responsibility in this post	3.1149	.57920
6	I have good clinical supervision at all time	2.7011	1.02430
7	There is racism in this post	1.4253	1.10635
8	I have to perform inappropriate tasks	1.8161	1.11573
9	There is an informative junior doctors handbook	1.5402	1.21812
10	My clinical teachers have good communication skills	3.0920	.69269
11	I am called inappropriately by attendants/ staff nurses	1.9195	1.25955
12	I am able to participate actively in educational events	2.5632	.98478
13	There is sex discrimination in this post	2.0115	1.33377
14	There are clear clinical protocols in this post	2.3793	.89236
15	My clinical teachers are enthusiastic	2.8851	.84117
16	I have good collaboration with other doctors in my grade	3.1034	.59130
17	My duty hours are defined and are according to international standards	.9885	1.18610
18	I have the opportunity to provide continuity of care	2.5172	.86080
19	I have suitable access to career advice	1.9540	1.26590
20	This hospital has good quality accommodation for Junior Doctors, especially when on call	1.5862	1.30786
21	There is access to an educational programme relevant to my Needs	2.0345	1.02807
22	I get regular feedback from senior colleagues	2.5287	.893807
23	My clinical teachers are well organized	2.8276	.96698
24	I feel physically safe within the hospital environment	1.5862	1.39394
25	There is a no-blame culture in this post	1.6667	1.19754
26	There are adequate catering facilities when I am on call	1.1264	1.05439
27	I have enough clinical learning opportunities for my needs	2.2759	.92371
28	My clinical teachers have good teaching skills	3.0345	.67252
29	I feel part of a team working here	3.0230	.77725
30	I have opportunities to acquire the appropriate practical procedures for my grade	2.4713	.93807
31	My clinical teachers are accessible	2.9425	.81206
32	My workload in this job is fine	1.4023	1.14587
33	Senior staff utilize learning opportunities effectively	2.2414	.99960
34	The training in this post makes me feel ready to be a Senior House Officer/Specialist Registrar/Consultant	2.6322	.90367
35	My clinical teachers have good mentoring skills	2.9425	.81206
36	I get a lot of enjoyment out of my present job	2.0920	1.10635
37	My clinical teachers encourage me to be an independent learner	2.7816	.95753
38	There are good counseling opportunities for junior doctors who fail to complete their training satisfactorily	1.9655	1.21472
39	The clinical teachers provide me with good feedback on my strengths and weaknesses	2.4943	.83351
40	My clinical teachers promote an atmosphere of mutual respect	2.6897	1.01512
	SUB SCALE		
	Autonomy	30.1609	5.85260
	Teaching	38.8736	7.03613
	Social Support	21.4598	5.75428
	Total	90.4943	15.44071

general medicine, paediatrics and gynaecology. Fifty four PGR's (62.1%) were single in this study. Also mean ± SD was calculated for each question, subscales of PHEEM and the total score were calculated. It was found that lowest mean score was for the question 17 stated as "My duty hours are defined and are according to international standards". The mean PHEEM total score was found as 90.49 ± 15.44. According to subscales, maximum score was for teaching followed by autonomy and social support. All these data are given in Table-1. When categorized into global scales, most of the residents (71.3%) labelled educational environment into level 3 (more positive than negative but room for improvement), followed by plenty of problems (26.43%)

Table-2: PHEEM score according to age, year of residency & marital status.

	PHEEM Score Mean ± SD	p-value
Gender		
Male	91.24±15.23	0.5266
Female	89.0±16.01	
Year of Residency		
1st year	93.90±14.13	0.369
2nd year	92.40±15.97	
3rd year	89.57±17.94	
4th year	86.69±12.25	
5th year	89.25±25.091	
Marital Status		
Single	92.44±16.48	0.079
Married	87.30±13.18	

and l excellent environment (2.2%).

Mean PHEEM score for each department was calculated and it was found that highest score was noted in Neurology department followed by ENT, Paediatric medicine and Internal Medicine. Also the lowest score for PHEEM was observed for Anaesthesia department.

Mean PHEEM score was assessed for gender, year of residency and marital status. It is summarized in Table-2. Interestingly males reported a better PHEEM score than females. Also PHEEM score decreased successively as the year of residency increased. Those who were single reported a better PHEEM score than married residents. However, all of these differences were not significant.

Conclusion

PHEEM is a good tool allowing stakeholders to reflect the strengths and weaknesses of their residency programme. Overall, the educational environment of the hospital was found satisfactory; however, there is a lot of room for improvement. We recommend to take measures to increase the educational environment of the institutions, particularly to the specialties with lower PHEEM score, so that PGR's may get a benefit. It may be enhanced by conducting regular classes, journal club meetings and regular assessment of PGR's. Our study has few limitations; only one public teaching hospital of Lahore was evaluated. It is likely that carrying out such an assessment in other teaching hospitals of the country and smaller cities may yield different results. Also PHEEM may be modified further to suit the local context in line with our own requirements and guidelines. The modified tool may then be used to assess education environment in hospitals of Pakistan on regular basis.

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Conflict of Interest: None to be declared.

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Reference

1. Sheikh S, Kumari B, Obaid M, Khalid N. Assessment of postgraduate educational environment in public and private hospitals of Karachi. J Pak Med Assoc. 2017; 67: 171-77.
2. Roff S, McAleer S, Harden RM, Al-Qahtani M, Ahmed AU, Deza H, et al. Development and validation of the Dundee ready education environment measure (DREEM). Med Teach. 1997; 19: 295-99.
3. Khan MNA. Evaluation of the learning environment of teaching hospitals of twin cities in Pakistan [Thesis]: Stellenbosch: Stellenbosch University; 2014.
4. Brown M, Piper M. Experience with a web?based version of the Anaesthetic Theatre Educational Environment Measure (ATEEM). Anaesthesia. 2007; 62: 317-17.
5. Binsaleh S, Babaeer A, Rabah D, Madbouly K. Evaluation of Urology Residents' Perception of Surgical Theater Educational Environment. J Surg Educ. 2015; 72: 73-9.
6. Ahmed N, Devitt KS, Keshet I, Spicer J, Imrie K, Feldman L, et al. A systematic review of the effects of resident duty hour restrictions in surgery: impact on resident wellness, training, and patient outcomes. Ann Surg. 2014; 259: 1041-53.
7. Roff S, McAleer S, Skinner A. Development and validation of an instrument to measure the postgraduate clinical learning and teaching educational environment for hospital-based junior doctors in the UK. Med Teach. 2005; 27: 326-31.