

Evaluation of Postgraduate Surgical Educational Environment

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Abstract

Background: To evaluate the educational climate of postgraduate trainees working in surgical departments

Methods: In this cross-sectional descriptive study 77 postgraduate trainees were enrolled. The data was collected by using internationally validated Postgraduate Hospital Educational Environment Measure (PHEEM), questionnaire. PHEEM is a 40 item questionnaire that comprises of 3 broad components. These components are meant to perceive the role autonomy of postgraduate residents, their teaching during their training in hospitals and social support available to them during training. Each item of PHEEM questionnaire scores 0-4 on 5 point likert scale. Maximum score is 160. Data was analyzed using SPSS version 16. Mean and standard deviation were calculated for each item. Moreover, percentage and frequency were also depicted during inter hospital and inter departmental comparisons.

Results: On PHEEM analysis, total score was calculated to be 130.32 ± 48.34 . 81.4% trainees were contented with the autonomy available to them during training while 88.4% were comfortable with teaching opportunities offered during training. However, social support provided to them was affirmed to be 72.1%.

Conclusion: Overall learning environment of clinical trainees was satisfactory particularly regarding their clinical teaching and provision of autonomy to them in their respective units. However social support should be further augmented to maximize their learning.

Key Words: PHEEM, Postgraduate trainees, Surgical departments

Introduction

Educational climate is of paramount importance not only for undergraduate medical students but also for the postgraduate trainees. As medicine is a very competitive field, this entails for the provision of high

quality training.¹ Cross et al highlighted the significance of educational climate in successful career choice. Regular monitoring of educational environment is also necessary to avoid its deviation from well defined standards.² Learning environment is a key factor that not only affects the selection of any discipline for training but also promotes the pursuance of certain targets for achievement of excellence in any institution.¹

Factors affecting educational climate of trainees are very crucial to enhance their learning. Basically there are three parts of learning environment that should be given due consideration. First is physical environment which comprises of facilities at the workplace including safety of the trainees, food, shelter etc. Second is emotional climate which includes reinforcement of the trainees by their seniors. Last is intellectual climate that is actually having learning opportunities with the patients and practicing evidence based medicine.³ Perception of the trainees pertaining to their educational climate at various approved institutions are also reviewed by UK General Medical Council. Such inspections are very informative as they facilitate the scrutiny of strengths and weaknesses of different trainings and resident programs.⁴

Multiple tools for evaluation of educational environment were studied by Soemantri et al during 2010. These instruments were designed keeping in view their suitability for different educational settings and these were proved to be valid as well as reliable in gauging an educational climate.⁵ In present this assessment was done by using Postgraduate Hospital Educational Environment Measure (PHEEM), a tool that was proved to be having high degree of internal reliability for evaluation of educational climate of internees.⁶ This research will not only depict the strengths and weaknesses of postgraduate training in respective surgical units of Allied Hospitals but also assist the policy makers in planning appropriate strategies for betterment in future.

Subjects and Methods

A cross-sectional descriptive study was carried out among all 77 postgraduate trainees who are doing their postgraduate training in total five surgical units of all three Allied Hospitals (Holy Family Hospital (HFF), Benazir Bhutto Hospital (BBH) and District Head Quarters Hospital (DHQH)) of Rawalpindi Medical College, Rawalpindi. The data was collected by using internationally validated Postgraduate Hospital Educational Environment Measure (PHEEM), questionnaire during March 2016. PHEEM is a 40 item questionnaire that is comprised of 3 broad components. These components are meant to perceive the role autonomy of postgraduate residents, their teaching during their training in hospitals and social support available to them during training. Each item of PHEEM questionnaire scores 0-4 on 5 point likert scale. Maximum score is 160. Data was analyzed using SPSS version 16. Mean and standard deviation were calculated for each item. Moreover, percentage and frequency were also depicted during inter hospital and inter departmental comparisons.

Results

The highest score was in perception of teaching (88.4) (Table 1). Lowest was in perception of social support (Table 2). Cumulative score of perception of role autonomy was 45.57 (Table 3). Majority agreed that working hours conformed to what is required in internship (Table 4). Majority disagreed with the workload in the internship (Table 5). Forty four out of 77 were satisfied with the clinical supervision and feed back (Table 6&7).Mentors' skills and encouragement was endorsed by majority (Table 8-10)

Table 1: Percentage scored in each component of PHEEM

Components of PHEEM	Mean	SD	% of maximum score
Perception of role autonomy (56)	45.57	14.87	81.4%
Perception of teaching (60)	53.02	18.63	88.4%
Perception of social support (44)	31.73	15.64	72.1%
Total score (Max= 160)	130.32	48.24	

Table 2: Items with lowest score

Components of PHEEM	Items with lowest Mean ± SD	Mean	SD
Perception of role autonomy	I am bleeped inappropriately	2.75	0.97
Perception of teaching	I have protected educational time during my training	3.03	1.01
Perception of social support	There is racism in this post	2.23	1.07

Table 3: Mean and standard deviation of individual items of PHEEM Questionnaire (max=4)

Perception of role Autonomy	Mean	SD
1.I have a clear description of work that provides information about hours of work	3.04	1.28
4. I had an informative induction program	3.28	1.11
5. I have appropriate level of responsibility during training	3.81	0.87
8. I have to perform inappropriate tasks	3.03	1.13
9. There is an informative house officers handbook	2.78	1.24
11. I am bleeped inappropriately	2.75	0.97
14. There are clear clinical protocols in this post	3.1	1.04
17. My working hours conform to what is required	3.01	1.24
18. I have opportunity to provide continuity of care	3.48	0.87
29. I feel part of a team working here	3.69	0.95
30. I have opportunities to acquire the appropriate practical procedures for my grade	3.49	1.05
32. My workload in this job is fine	2.82	1.20
34. The training in this post makes me feel ready	3.40	1.04
40. My clinical teachers promote an atmosphere of respect	3.91	0.88
Cumulative scores of above items out of 56	45.57	
Perception of Teaching		
2. My clinical teachers set clear expectations	3.58	0.99
3. I have protected educational time during training	3.03	1.01
6. I have good clinical supervision at all time	3.23	1.16
10. Teachers have good communication skills	3.64	1.12
12. I am able to participate actively in educational events	3.52	0.95
15. My clinical teachers are enthusiastic	3.43	0.94
21. There is access to educational programs	3.52	0.88
22. I get regularly feedback from seniors	3.51	0.94
23. My clinical teachers are well organized	4.14	4.69
27. I have enough clinical learning opportunities	3.48	0.98
28. My clinical teachers have good teaching skills	3.71	0.99
31. My clinical teachers are accessible	3.70	0.96
33. Senior staff utilize learning opportunities	3.53	0.91
37. Teachers encourage me to be an independent learner	3.54	1.11
39. Teachers provide me with good feedback	3.48	0.99
Cumulative scores of above items out of 60	53.02	
Perception of Social Support		
7. There is racism in this post	2.23	1.07
13. There is sex discrimination in this post	2.67	1.22
16. I have good collaboration with other doctors in my grade	3.54	1.03
19. I have suitable access to careers advice	3.15	1.11
20. This hospital has good quality accommodation	2.58	1.31
24. I feel physically safe within the hospital environment	2.49	1.26
25. There is a no-blame culture in this post	3.40	3.60
26. There is adequate catering facilities when I am on call	2.44	1.23
35. My clinical teachers have good mentoring skills	3.47	1.20
36. I get a lot of enjoyment out of my present job	3.01	1.25
38. There are good counseling opportunities for junior doctors	2.75	1.36
Cumulative scores of above items out of 44	31.73	

Table 4: Working hours conform to what is required in the internship regulations

Hospital	Unit	Agree	No response	Disagree	Total
HFH	SU-I	12 (75%)	0	4 (25%)	16
	SU-II	1 (9.1%)	8 (72.7%)	2 (18.2%)	11
BBH	SU-I	2 (11.8%)	4 (23.5%)	11 (64.7%)	17
	SU-II	8 (44.4%)	5 (27.8%)	5 (27.8%)	18
DHQH	SU	7 (46.7%)	3 (20%)	5 (33.5%)	15
Total		30	20	27	77

Table 5: Workload in this job is fine

Hospital	Unit	Agree	No response	Disagree	Total
HFH	SU-I	10 (62.6%)	3 (18.7%)	3 (18.7%)	16
	SU-II	5 (45.4%)	2 (18.2%)	4 (36.4%)	11
BBH	SU-I	2 (11.8%)	3 (17.6%)	12 (70.6%)	17
	SU-II	9 (50%)	3 (16.7%)	6 (33.3%)	18
DHQH	SU	2 (13.3%)	2 (13.3%)	11 (73.4%)	15
Total		28	13	36	77

Table 6: Clinical supervision is adequate

Hospital	Unit	Agree	No response	Disagree	Total
HFH	SU-I	12 (75%)	2 (12.5%)	2 (12.5%)	16
	SU-II	4 (36.4%)	0	7 (63.6%)	11
BBH	SU-I	6 (35.3%)	2 (11.8%)	9 (52.9%)	17
	SU-II	13 (72.2%)	3 (16.7%)	2 (11.1%)	18
DHQH	SU	8 (53.3%)	3 (20%)	4 (26.7%)	15
Total		43	10	24	77

Table 7: Regular feedback from seniors was ensured

Hospital	Unit	Agree	No response	Disagree	Total
HFH	SU-I	14 (87.5%)	1 (6.25%)	1 (6.25%)	16
	SU-II	5 (45.4%)	5 (45.4%)	1 (9.2%)	11
BBH	SU-I	11 (64.7%)	0	6 (35.3%)	17
	SU-II	11 (61.1%)	6 (33.3%)	1 (5.6%)	18
DHQH	SU	8 (53.3%)	2 (13.3%)	5 (33.4%)	15
Total		49	14	14	77

Table 8: Clinical teachers have good teaching skills

Hospital	Unit	Agree	No response	Disagree	Total
HFH	SU-I	13 (81.2%)	2 (12.5%)	1 (6.3%)	16
	SU-II	10 (90.9%)	1 (9.1%)	0	11
BBH	SU-I	9 (52.9%)	2 (11.8%)	6 (35.3%)	17
	SU-II	16 (89%)	1 (5.5%)	1 (5.5%)	18
DHQH	SU	9 (60%)	4 (26.7%)	2 (13.3%)	15
Total		57	10	10	77

Table 9: Clinical teachers encourage to be an independent learner

Hospital	Unit	Agree	No response	Disagree	Total
HFH	SU-I	13 (81.2%)	1 (6.3%)	2 (12.5%)	16
	SU-II	11 (100%)	0	0	11
BBH	SU-I	9 (53%)	0	8 (47%)	17
	SU-II	13 (72.2%)	3 (16.7%)	2 (11.1%)	18
DHQH	SU	6 (40%)	5 (33.3%)	4 (26.7%)	15
Total		52	9	16	77

Table 10: Clinical teachers have good mentoring skills

Hospital	Unit	Agree	No response	Disagree	Total
HFH	SU-I	12 (75%)	4 (25%)	0	16
	SU-II	11 (100%)	0	0	11
BBH	SU-I	7 (41.1%)	0	10 (58.9%)	17
	SU-II	16 (88.9%)	0	2 (11.1%)	18
DHQH	SU	5 (33.3%)	4 (26.7%)	6 (40%)	15
Total		51	8	18	77

Discussion

In current study, cumulative score of all the items pertaining to role autonomy of postgraduate trainees working in surgical departments of all three Allied Hospitals was found to be 45.57/56 (81.4%) while another study carried out in surgical departments of Taibah University of Saudi Arabia depicted cumulative score of 24.1/56 (43.03%). Apparently results of our settings are much better and make us feel proud of providing ideal educational climate to our trainees which are amenable to fulfill all their learning requirements. Moreover, our study shows confirmation of working hours to internship regulations higher (3.01 ± 1.24) as compared to that scored in study conducted in Taibah University (1.00 ± 0.6)³. Another research among residents of Saudi University medical school revealed low scores (29.6 ± 8.1) regarding their role autonomy during residence as compared to that of present study.⁷ Majority of trainees in present study were satisfied both with their working hours and workload, but is still less than that observed (88.1%) among trainees of Postgraduate Medical Institute at Lady Reading Hospital, Peshawar.⁸ The degree of dissatisfaction among trainees of DHQ Hospital is thought provoking and demands urgent attention. In present study, perception of trainees regarding their teaching in their respective units was scored to be 53.02/60 while among residents of Taibah University this component still showed poor score 29.3/60³. Likewise among

residents of Saudi University Medical School this relevant score was calculated to be 33.5 /60.⁷ Although trainees in our clinical settings were found to be satisfied with their teaching in their surgical departments, but inter hospital and interdepartmental comparison of few items of this component (perception of teaching) as reflected in Table 6, 7, 8 and 9 we concluded that 75% and 87.5% trainees of SU-I, HFH claimed of having good clinical supervision all the times and availability of regular feedback from their seniors respectively. In addition, 81.2% trainees of SU-I, HFH assured of being encouraged by their clinical teachers for independent learning. On the other hand, 90.9% trainees of SU-II, HFH affirmed that their supervisors are very well equipped with teaching skills. Contrary to the results of our study, 46.9% residents of Lady Reading Hospital, Peshawar were dissatisfied with their clinical teaching.⁸ These results are not depicted for criticism but to facilitate our postgraduate trainees for better learning in their respective units.

In present study, social support given to our postgraduate trainees was found to be more (72.1%) as compared to both residents of Taibah University (60%)³ and those of Saudi University Medical School (51.1%).⁷ Another international study revealed poor social support to residents (59%)⁹ as compared to what was provided to the trainees of Allied Hospitals attached with Rawalpindi Medical College. Although our supervisors are socially supporting our trainees to much extent but by deep analysis of one of the items pertaining to social support we came to know that 88.9% of the trainees of SU-II, BBH were satisfied with the mentoring of their clinical teachers while lowest degree of satisfaction (33.3%) was found among those doing training in surgical unit of DHQ Hospital, Rawalpindi. No doubt, supervisors and teachers of our Allied Hospitals are very dedicated and committed but their inadequate mentoring might be due to their busy schedule, increased patient load in these government hospitals and time constraints.

Conclusion

- Postgraduate trainees were found to be satisfied with their clinical teaching followed by the role autonomy accessible to them during their trainings.
- Social support given to them is a factor that is lagging behind and necessitates proper consideration to boost up their knowledge, skills as well as their attitudes with the patients.

References

- Harden RM. Educational Environment. A practical guide for medical teachers. 4th Edition. Edited by John A. Dent & Ronald M. Harden. 2013: 392-99.
- Cross V, Hicks C, Parle J, Field S. Perceptions of the learning environment in higher specialist training of doctors: implications for recruitment and retention. Medical Education 2006; 40: 121-28.
- Algaidi SA. Assessment of Educational Environment for interns using Postgraduate Hospital Educational Environment Measure (PHEEM). J T U Med Sc 2010; 5(1): 1-12.
- Cannon GW, Keitz SQ, Holland GJ. Factors determining medical students' and residents' satisfaction during VA-based training: findings from the VA learners' perception survey. Academic Medicine 2008; 83(6): 611-20.
- Soemantri D, Herrera C, Riquelme A. Measuring the educational environment in health professions studies: A systematic review. Medical Teacher 2010; 32: 947-952.
- Gooneratne IK, Munasinghe SR, Siriwardena C, Olupeliyawa AM, Karunathilake I, Assessment of psychometric properties of a modified PHEEM questionnaire. Ann Acad Med Singapore 2008; 37(12): 993-97.
- Al-Shiekh MH, Ismail MH, Al-Khater SA. Validation of the postgraduate hospital educational environment measure at Saudi University medical school. Saudi Med J 2014; 35(7): 734-38.
- Ali IS, Khan M, Khan A, Shah MF, Ali G. Trainees' feedback on the prevailing teaching methods in postgraduate medical institute, Lady Reading Hospital, Peshawar, Pakistan. JCSP 2012; 22(5): 311-16.
- Vieira JE. The postgraduate hospital educational environment measure (PHEEM) questionnaire identifies quality of instruction as a key factor predicting academic achievement. Clinics (Sau Paulo) 2008; 63(6): 741-46.