

ORIGINAL ARTICLE

Evaluation of the educational environment for medical interns at Tertiary Care Hospital in Peshawar, Using the Postgraduate Hospital Educational Environment Measure (PHEEM): A cross-sectional study.

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ABSTRACT... Objective: To evaluate the educational environment for interns during their internship rotations and identify strengths and weaknesses across three domains: role of autonomy, teaching and social support, using the Postgraduate Hospital Educational Environment Measure (PHEEM) questionnaire in Peshawar. **Study Design:** Cross-sectional study. **Setting:** Northwest General Hospital and Research Center, Peshawar. **Period:** July 2025 to December 2025. **Setting:** Among 204 medical interns at a tertiary care teaching hospital using the Postgraduate Hospital Educational Environment Measure (PHEEM) questionnaire. Data were collected from all major clinical departments. Reliability was assessed using Cronbach's alpha. Comparisons were made by gender using an independent samples t-test and across departments using one-way ANOVA. Statistical significance was set at $p < 0.05$. **Results:** This PHEEM-based study found that the overall educational environment for house officers at Northwest General Hospital & Research Centre, Peshawar, was perceived as more positive than negative (mean total PHEEM score = 103.81 ± 26.73 out of 160). The highest-rated domain was Perception of Teaching (39.77 ± 11.78), followed by Role Autonomy (36.38 ± 8.92), while Perception of Social Support scored the lowest (27.67 ± 7.42). One-way ANOVA revealed statistically significant differences across departments in total PHEEM score ($p = 0.021$), Role Autonomy ($p = 0.029$), and Social Support ($p = 0.010$), with Medicine Allied and Surgery Allied departments consistently showing the highest scores and Obstetrics & Gynecology recording the lowest. **Conclusion:** The PHEEM-based study at Northwest General Hospital, Peshawar, revealed an excellent educational environment for medical interns. Surgery and Allied Medicine excelled, while Obstetrics and Gynaecology scored lowest, likely due to high workloads. Minor improvements in workload management and support facilities could further enhance the internship experience.

Key words: Clinical Learning, Healthcare Education, Internship Experience, Medical Interns, Medical Education, Mentorship, Training Environment.

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INTRODUCTION

The quality of medical education that an intern receives in any healthcare establishment or institution is significantly influenced by the educational environment they experience within that institution. The academic environment is a term that encompasses the physical, emotional, and intellectual factors that ultimately dictate the direction of the learning process, including facilities, mentorship, teaching quality, and social support.¹ For any intern, but in this specific case, medical interns, a positive educational environment is essential to ensure that competency, confidence, and readiness for future challenges are instilled in the intern.² Conversely, a suboptimal learning environment for medical interns can reduce professional growth, leading to burnout,

reduced confidence, and endanger patient care.³

An internship is the first practical experience that a medical student receives on their journey to becoming a skilled physician or surgeon. They learn crucial practical skills throughout their internship.⁴ It is the critical transition phase, bringing theoretical knowledge from medical college with practical clinical experience. Medical interns integrate their knowledge, develop technical skills, and refine professional behaviors during an internship.⁵ The quality of the educational environment in any healthcare institution significantly impacts the learning and achievement of medical interns. in a healthcare institution.

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It sets the preamble for their growth and their journey as a doctor, so it is necessary to make sure that they receive the right training and educational environment, and that it is being delivered to them in a practical sense and not just in curriculum.⁶ Many studies have shown that a positive educational learning environment enhances interns' satisfaction, engagement, and overall performance, while also improving patient outcomes.⁷

Significant reforms are aligned with global standards in medical education, yet challenges like resource constraints, high workload, and variable mentorship quality persist across the world.^{8,9} These factors can influence the learning climate, particularly in teaching hospitals where medical interns undergo clinical rotations. The Postgraduate Hospital Educational Environment Measure (PHEEM) is a globally tested tool specifically designed to assess the educational environment in teaching institutions and hospitals, offering insight into the learning of interns and identifying areas of strength and those requiring further improvement. It evaluates three domains, including perception of role autonomy, teaching & social support, providing a comprehensive framework to identify strengths and areas of improvement in the training environment.¹⁰ Previous studies in similar settings have highlighted the importance of mentorship, peer support, and structured teaching in creating a conducive learning environment.¹¹

In resource-limited countries and in settings such as that of Pakistan, interns may not always have access to advanced simulators and the equipment that their counterparts in much more developed countries might receive, but they can bridge these gaps with proper guidance under supervision and a hands on supervision, which becomes the cornerstone of the learning of the intern. Interns often value empowering teaching interactions and clear guidance even more than institutional support or autonomy. It is absolutely of the utmost importance that they receive an educational environment that is adequate and complete in every aspect.¹²

This study evaluated the educational environment for medical interns at Northwest General Hospital and Research Center, Peshawar, using the

Postgraduate Hospital Educational Environment Measure (PHEEM) questionnaire. The study aimed to assess the quality of the learning climate and identify areas for improvement. The findings provide valuable insights for enhancing internship training at the study institution and may serve as a useful reference for other teaching hospitals across Pakistan.

METHODS

A cross-sectional study was conducted at Northwest General Hospital and Research Center, Peshawar, from July 2025 to December 2025, to evaluate the perceived educational environment among medical interns using the Postgraduate Hospital Educational Environment Measure (PHEEM) questionnaire. The study population included all medical interns (house officers) undergoing or having recently completed their internship rotations across medical and surgical specialties. Eligible participants were interns with at least one month of exposure in a rotation. Interns with less than one month of clinical exposure were excluded. Convenience sampling was employed to recruit participants. The sample size was calculated as 208 using the OpenEpi software, assuming a 95% confidence interval. Data were collected from 204 respondents (response rate:98.1%), as four participants did not return the questionnaire. Data collection commenced after obtaining ethical approval from the Institutional Review Board & Ethical Committee of Alliance Healthcare Private Ltd (Northwest General Hospital's Ethics Committee) with Reference No. IRB&EC/2025-GH/0260.

The PHEEM is a validated 40-item self-administered questionnaire designed to assess the postgraduate hospital educational environment. It comprises three domains: perception of the role of autonomy (13 items, maximum score 52), perception of teaching (15 items, maximum score 60), perception of social support (12 items, maximum score 48). Each item is scored on a 4-point Likert scale from 0 (strongly disagree) to 4 (strongly agree), with four negatively worded items reverse-scored. The total maximum score is 160. No translation was required, as English is the medium of medical education in Pakistan.

Data were entered and analyzed in SPSS version 27. Descriptive statistics, including means and

standard deviations, were used to summarize the total PHEEM score and subscale scores. Internal consistency of the scale in the current sample was assessed using Cronbach's alpha for the overall questionnaire and its three domains. For inferential statistics, an independent samples t-test was used to compare mean PHEEM scores between male and female interns, while one-way ANOVA was applied to compare scores across the six clinical departments; a p-value < 0.05 was considered statistically significant.

RESULTS

A total of 204 Medical interns participated in the study. The mean age of the participants was 25.84 ± 0.92 years, with 60.8% males and 39.2% females. The study included 204 Medical interns. General Medicine accounted for 50 (24.5%) participants, while General Surgery included 51 (25.0%) participants. Allied Medicine comprised 79 (38.7%) Medical interns, which included Paediatrics (29, 14.2%) and Medicine Allied (25, 12.3%), along with other allied medicine rotations such as Cardiology, Nephrology, Neurology, Pulmonology, Endocrinology, Rheumatology, Dermatology, Psychiatry, Gastrology, and Emergency. Similarly, Allied Surgery consisted of 49 (24.0%) participants, including Gynaecology & Obstetrics (17, 8.3%) and Surgery Allied (32, 15.7%), with the remaining allied surgical rotations including Orthopaedics, Ophthalmology, Cardiothoracic Surgery, Neurosurgery, Plastic Surgery, Anaesthesia, Radiology, and Urology (Table-I).

The overall mean PHEEM score was 136.67 ± 19.50 out of 160 (SD $\approx 11-12$), which corresponds to an excellent perceived educational environment according to standard PHEEM interpretation criteria (121-160=Excellent). The overall Cronbach's alpha for the 40-item PHEEM inventory across all departments was 0.951, indicating excellent internal consistency and reliability of the tool. Domain-specific results revealed consistently high perceptions across all subscales: perception of autonomy (mean 47.70 ± 8.49 (out of 56), perception of teaching (mean 54.76 ± 11.78 (out of 60), and perception of social support (mean 35.96 ± 7.00 (out of 44)) These scores indicate that interns generally felt appropriately autonomous in clinical

decision making, received good-quality supervision and teaching, and experienced a reasonable level of peer and senior support within the hospital setting (Table-III).

These scores indicate a generally positive perception of the educational environment, with the highest scores observed in Perception of Teaching and the lowest in Perception of Social Support. Independent samples t-test showed no statistically significant difference in overall PHEEM score or any subscale between male and female interns (all $p > 0.05$). One-way ANOVA revealed statistically significant differences across departments in Role Autonomy ($F = 2.547$, $p = 0.029$) and Perception of Social Support ($F = 3.103$, $p = 0.010$). Borderline significant differences were observed in overall PHEEM score ($F = 2.730$, $p = 0.021$) and Perception of Teaching ($F = 2.192$, $p = 0.057$) (Table-III).

Department-wise analysis showed that Medicine Allied recorded the highest overall PHEEM score (112.96 /160), followed by Surgery Allied (110.22 /160) and General Medicine (104.96 /160). Gynaecology & Obstetrics had the lowest overall score (87.88 /160), which was just above the excellent threshold and can be considered borderline excellent. This department also had the lowest scores in Role Autonomy (31.53 ± 11.22) and Perception of Social Support (23.06 ± 8.27) (Table-IV and Figure-1).

Individual item analysis (Table-II) revealed several areas of concern where mean scores were below 2.5 (after reversal of negatively worded items). The lowest scoring items included:

- Inadequate catering facilities when on call (SS26: 1.18 ± 1.35)
- Poor quality accommodation for junior doctors (SS20: 1.81 ± 1.23)
- Lack of a no-blame culture (SS25: 2.11 ± 1.23)
- Racism in the post (SS7: 2.22 ± 1.20)
- Sex discrimination (SS13: 2.34 ± 1.19)
- Inappropriate tasks (RA8: 2.23 ± 1.23)
- Inappropriate bleeping (RA11: 2.43 ± 1.07)

In contrast, highly rated items (mean > 3.4) included good clinical supervision at all times (T6: 3.40 ± 1.08), accessibility of clinical teachers (T31: $3.38 \pm$

1.00), good communication skills of teachers (T10: 3.38 ± 1.03), opportunity to provide continuity of care (RA18: 3.50 ± 1.08), and feeling part of a team (RA29: 3.43 ± 1.11).

In conclusion, the process of educating medical interns in the hospitals in Peshawar is done in highly favourable and educational settings. This can be deduced from the high PHEEM scores resulting from proper clinical supervision, patient encounters, and teamwork, among other factors. However, it is imperative that the existing problems, such as overworking, improper task delegation, scarcity of learning materials, and finger-pointing, are sorted out for better education in the future.

TABLE-I

Demographic characteristics of the study participants (N=204)

Variable	Category / Statistic	n (%)
Age (years)	Mean $\pm$ SD	25.84 $\pm$ 0.92
	Median	26.00
Gender	Male	124 (60.8)
	Female	80 (39.2)
Department / Speciality	General Medicine	50 (24.5)
	General Surgery	51 (25.0)
	Paediatrics	29 (14.2)
	Gynaecology & Obstetrics	17 (8.3)
	Surgery Allied	32 (15.7)
	Medicine Allied	25 (12.3)

TABLE-II

The PHEEM Subscale and Individual Item Scores (negative items in italics)

I. Role Autonomy	Item	Mean (SD)
1. I have a contract of employment that provides information about hours of work	RA1	3.65 (1.05)
4. I had an informative induction programme	RA4	3.02 (1.08)
5. I have the appropriate level of responsibility in this post	RA5	3.29 (1.12)
8. I have to perform some inappropriate tasks	RA8	2.23 (1.23)
9. There is an informative Junior Doctors' handbook	RA9	2.18 (1.34)
11. I am beeped (called or summoned) inappropriately	RA11	2.43 (1.07)
14. There are clear clinical protocols in this post	RA14	3.24 (1.17)
17. My working hours are in accordance with the limits specified by the curriculum	RA17	2.56 (0.89)
18. I have the opportunity to provide continuity of care for my patients	RA18	3.50 (1.08)
29. I feel part of a team working here	RA29	3.43 (1.11)
30. I have opportunities to acquire the appropriate practical procedures for my grade	RA30	3.24 (1.09)
32. My workload in this job is fine	RA32	3.00 (1.06)
34. The training in this post makes me feel ready to be a senior registrar/consultant	RA34	2.41 (1.20)
40. My clinical teachers provide an atmosphere of mutual respect	RA40	3.00 (1.08)
Total (Role Autonomy)		47.70 (8.49)
II. Perception of Teaching	Item	Mean (SD)
2. My clinical teachers set clear expectations	T2	3.25 (1.16)
3. I have protected educational time in this post	T3	2.63 (1.11)
6. I have good clinical supervision at all times	T6	3.40 (1.08)
10. My clinical teachers have good communication skills	T10	3.38 (1.03)
12. I am able to participate actively in educational events	T12	2.55 (1.20)
15. My clinical teachers are enthusiastic	T15	3.02 (1.16)
21. There is access to an educational programme relevant to my needs	T21	2.38 (1.11)
22. I get regular feedback from seniors	T22	2.60 (1.25)
23. My clinical teachers are well organised	T23	3.00 (1.14)

27. I have enough clinical learning opportunities for my needs	T27	2.70 (1.16)
28. My clinical teachers have good teaching skills	T28	3.30 (1.06)
31. My clinical teachers are accessible	T31	3.38 (1.00)
33. Senior staff utilise learning opportunities effectively	T33	2.88 (1.13)
37. My clinical teachers encourage me to be an independent learner	T37	3.05 (1.10)
39. The clinical teachers provide me with good feedback on my strengths and weaknesses	T39	2.55 (1.18)
Total (Perception of Teaching)		54.76 (11.78)

III. Perception of Social Support	Item	Mean (SD)
7. There is racism in this post	SS7	2.22 (1.20)
13. There is sex discrimination in this post	SS13	2.34 (1.19)
16. I have good collaboration with other doctors in my grade	SS16	2.55 (1.01)
19. I have suitable access to career advice	SS19	2.25 (1.11)
20. This hospital has good quality accommodation for junior doctors, especially when on call	SS20	1.81 (1.23)
24. I feel physically safe within the hospital environment	SS24	2.63 (1.16)
25. There is a no-blame culture in this post	SS25	2.11 (1.23)
26. There are adequate catering facilities when I am on call	SS26	1.18 (1.35)
35. My clinical teachers have good mentoring skills	SS35	2.75 (1.14)
36. I get a lot of enjoyment out of my present job	SS36	1.96 (1.23)
38. There are good counselling opportunities for junior doctors who fail to complete their training satisfactorily	SS38	2.26 (1.20)
Total (Perception of Social Support)		35.96 (7.00)
Total PHEEM Score (40 items)		136.67 (19.50)

TABLE-III

Overall PHEEM and Subscale Scores (N=204)

Domain	Total Raw Score Mean (SD)	Cronbach's Alpha	Interpretation
Overall PHEEM Score	136.67 (19.50)	0.951	More positive than negative, but room for improvement
Role Autonomy	47.70 (8.49)	0.841	A more positive perception of one's job
Perception of Teaching	54.76 (11.78)	0.925	Moving in the right direction
Perception of Social Support	35.96 (7.00)	0.790	More pros than cons

TABLE-III

Overall PHEEM and Subscale Scores with Gender and Department Comparisons

Domain	Gender Comparison (Independent Samples t-test)				Department Comparison (One-Way ANOVA)							
	Male (n=124) Mean (SD)	Female (n=80) Mean (SD)	Levene's Test for Equality of Variances.		General Medicine (n=50)	General Surgery (n=51)	Paediatrics (n=29)	Gynaecology & Obstetrics (n=17)	Surgery Allied (n=32)	Medicine Allied (n=25)	Levene's Test for Equality of Variances.	
			F	P-Value							F	P-Value
Overall PHEEM Score	104.80 ± 28.39	102.29 ± 24.03	4.047	.046	104.96 ± 24.02	103.69 ± 25.02	96.45 ± 24.36	87.88 ± 35.39	110.22 ± 28.33	112.96 ± 24.69	2.730	0.021
Role Autonomy	36.57 ± 9.38	36.57 ± 9.38	3.184	.076	36.98 ± 8.08	36.65 ± 7.70	33.41 ± 9.42	31.53 ± 11.22	37.94 ± 9.55	39.36 ± 8.39	2.547	0.029
Perception of Teaching	39.94 ± 12.66	39.94 ± 12.66	6.169	.014	40.54 ± 10.14	39.20 ± 11.59	37.34 ± 10.15	33.29 ± 16.57	42.09 ± 12.30	43.64 ± 11.14	2.192	0.057
Perception of Social Support	28.28 ± 7.57	28.28 ± 7.57	.623	.431	27.44 ± 7.12	27.84 ± 7.26	25.69 ± 5.93	23.06 ± 8.27	30.19 ± 7.75	29.96 ± 7.42	3.103	0.010

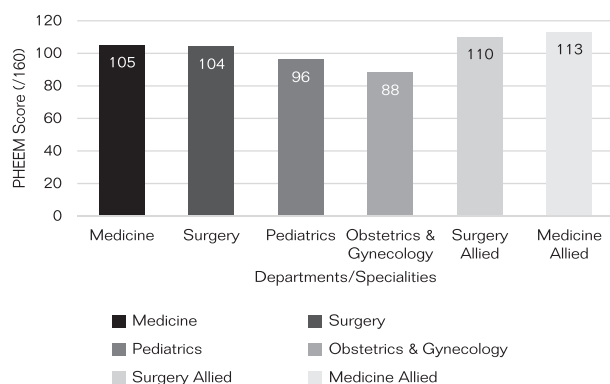
TABLE-V

Distribution of PHEEM Score Categories and Subscales by Department (N=204)

Category / Domain	General Medicine (n=50)	General Surgery (n=51)	Paediatrics (n=29)	Obstetrics and Gynecology (n=17)	Surgery Allied (n=32)	Medicine Allied (n=25)	Total (n=204) 90	χ^2 (df=15)	P-Value
Overall PHEEM Score									
0-40: Very poor	0	1	1	2	0	0	4	21.095	0.134
41-80: Plenty of problems	9	10	4	5	4	2	34		
81-120: More positive than negative but with room for improvement	30	27	21	7	17	16	118		
121-160: Excellent	11	13	3	3	11	7	48		
Role Autonomy									
0-15: Very poor quality	0	1	3	2	0	0	6	22.973	0.085
16-30: In need of re-training	7	5	4	5	5	3	29		
31-45: Moving in right direction	32	34	19	7	17	14	123		
46-60: Model Teachers	11	11	3	3	10	8	46		
Perception of Teaching									
0-15: Very poor quality	1	1	2	2	1	0	7	18.639	0.231
16-30: In need of re-training	9	12	4	4	4	2	35		
31-45: Moving in right direction	27	24	20	7	14	13	105		
46-60: Model Teachers	13	14	3	4	13	10	57		
Perception of Social Support									
0-11: Non-existent	0	0	0	2	0	1	3	31.403	0.008
12-22: Not a pleasant place	12	14	8	7	6	2	49		
23-33: More pros than cons	29	26	19	7	15	16	112		
34-44: Good support	9	11	2	1	11	6	40		

FIGURE-1

Mean overall PHEEM scores across clinical departments



DISCUSSION

This study found that the overall educational environment for medical interns (Medical interns) at Northwest General Hospital & Research Centre, Peshawar, was perceived as more positive than negative (mean of PHEEM = 3.03 ± 0.69 ; total PHEEM score = $136.67 \pm 19.50/160$). The top-scoring PHEEM domain was that of Perception of Teaching (3.04 ± 0.77), whereas the lowest-scoring PHEEM domain was that of Perception of Social Support (2.93 ± 0.70). Such results have been observed consistently in several recent studies on the PHEEM instrument carried out in Pakistan and LMICs around the world.

TABLE-V

Distribution of PHEEM Score Categories and Subscales by Department (N=204)

Category / Domain	General Medicine (n=50)	General Surgery (n=51)	Paediatrics (n=29)	Obstetrics and Gynecology (n=17)	Surgery Allied (n=32)	Medicine Allied (n=25)	Total (n=204) 90	χ^2 (df=15)	P-Value
Overall PHEEM Score									
0-40: Very poor	0	1	1	2	0	0	4	21.095	0.134
41-80: Plenty of problems	9	10	4	5	4	2	34		
81-120: More positive than negative but with room for improvement	30	27	21	7	17	16	118		
121-160: Excellent	11	13	3	3	11	7	48		
Role Autonomy									
0-15: Very poor quality	0	1	3	2	0	0	6	22.973	0.085
16-30: In need of re-training	7	5	4	5	5	3	29		
31-45: Moving in right direction	32	34	19	7	17	14	123		
46-60: Model Teachers	11	11	3	3	10	8	46		
Perception of Teaching									
0-15: Very poor quality	1	1	2	2	1	0	7	18.639	0.231
16-30: In need of re-training	9	12	4	4	4	2	35		
31-45: Moving in right direction	27	24	20	7	14	13	105		
46-60: Model Teachers	13	14	3	4	13	10	57		
Perception of Social Support									
0-11: Non-existent	0	0	0	2	0	1	3	31.403	0.008
12-22: Not a pleasant place	12	14	8	7	6	2	49		
23-33: More pros than cons	29	26	19	7	15	16	112		
34-44: Good support	9	11	2	1	11	6	40		

A similar Pakistani study by Riaz et al. among postgraduate trainees reported an overall mean PHEEM score of approximately 107 (on the 0–160 scale), indicating a “more positive perception” with teaching as the strongest domain, mirroring our findings. However, our study recorded a comparatively higher overall score, possibly due to the focus on medical interns (house officers) rather than advanced residents, or differences in institutional resources at a private tertiary care hospital.⁷

The excellent reliability of the PHEEM tool in our sample (Cronbach's $\alpha = 0.951$) is comparable to recent multicentre studies. For instance, a large study of 538 residents reported high reliability and also noted significant specialty-based differences, with Obstetrics & Gynaecology and Anesthesia

scoring lower a pattern similar to ours.¹³

Significant departmental differences were observed in our study, with Surgery Allied and Medicine Allied departments achieving the highest scores, while Gynaecology & Obstetrics consistently recorded the lowest scores, especially in Role Autonomy and Social Support. According to the study's results, Gynecology received the lowest score. This can contribute to the workload faced in these departments, and the quality of education deteriorates with that increased workload. This finding aligns with earlier Pakistani research by Waheed et al., a cross-sectional survey conducted to assess burnout among postgraduate residents of the gynecological specialty in Lahore, which was performed in the university and dental college in Faisalabad, which highlighted lower perceptions in

high-workload specialties due to excessive service demands, long duty hours, and burnout.¹⁴

We found a large disparity between the perceptions of teaching and social support in two departments, namely pediatrics and gynecology, in our study. This suggests that while interns do recognize the good teaching and the competency of the teachers they experience a weaker workplace climate, and a lack of inclusion or emotional burnout in gynecology and pediatricists both of which are high pressure, service heavy specialties in South Asia studies have regularly shown this disparity between teaching and social support with a study that was conducted in Lahore to evaluate the educational climate for postgraduate residents using PHEEM scale showed high teaching scores and social support scores being the lowest.¹⁵

Surgery Allied and Medicine Allied achieved the highest overall scores, indicating well-structured rotations, effective teaching, and strong peer and faculty support. This finding can also be attributed to the fact that surgery and medicine allied departments include departments such as ENT, Ophthalmology, Orthopedics, and plastic surgery, where the patient flow has been observed to be much less. This leads to the residents and the department members having more time to deal with interns and give them the proper time and guidance that they need.¹⁶

Common weak areas in our study (inadequate on-call catering and accommodation, limited career advice, inappropriate tasks, and heavy workload) echo findings from recent regional research. Deng et al. in a Chinese family medicine residency study reported Social Support as the weakest domain and emphasized the need for better infrastructure and mentoring, reinforcing that these challenges are widespread in teaching hospitals.¹⁷

The consistently low-scoring responses in our study included items such as “I have to perform inappropriate tasks”, “The workload is too heavy”, “I have good access to career advice”, and “I have good access to a quiet room for rest”; these items consistently scored below 2 across multiple departments. This indicates a disproportionate service burden, a lack of support infrastructure, and

inadequate support for interns’ well-being, which could directly affect interns’ ability to learn and their mental health. Such findings are not unique to our study and have been reported across multiple studies conducted in South Asia, where interns in the region face extended duty hours, lack of rest, and facilities that are not up to par, despite receiving satisfactory clinical training in their respective departments.^{18,19} In Pakistan, multiple reports have pointed to a mismatch between academic expectations and workplace realities, with interns expected to perform menial tasks or shoulder non-educational responsibilities in environments with minimal counseling or grievance redressal systems, which leads to interns facing both individual and organizational challenges as found in a study conducted in Peshawar among nursing interns as recently as 2022.¹⁹

In summary, while our study demonstrates a generally favourable learning climate for medical interns in Peshawar, better than some earlier Pakistani reports, it still highlights the universal need to strengthen social support and reduce workload pressures, particularly in Obstetrics & Gynaecology. These insights can guide targeted quality improvement initiatives in Pakistani teaching hospitals.

CONCLUSION

This PHEEM-based study demonstrates that a private tertiary care hospital in Pakistan can provide a generally supportive educational environment for medical interns (house officers). However, departmental variations exist, particularly lower social support and role autonomy in high-workload specialties. Targeted interventions are recommended in high-workload departments. These improvements would further strengthen the internship experience and contribute valuable insights to enhancing the quality of internship training.

LIMITATION

The study captured perceptions at a single point in time in a single institution, without tracking how they may change throughout the internship. This limits the ability to draw causal inferences or assess the impact of policy changes. The results of our study are based on a subjective self-assessment; they

are vulnerable to biases such as social desirability, recall bias, or fear of being identified, especially in departments with sensitive issues like hierarchy or discrimination.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

1. Fisseha H, Mulugeta B, Argaw AM, Kassu RA. **Internal medicine residents' perceptions of the learning environment of a residency training program in Ethiopia: A mixed methods study.** AMEP12. 2021; 1175-83.
2. AlShammari T, Alqahtani S, Al Jumaan M, Alameri R, Gosling C, Beovich B, et al. **The perceptions and expectations of the clinical learning environment in Saudi Arabia: A multidisciplinary study.** Medical Archives. 2023 Apr; 77(2):132.
3. Rehman A, Rehman T, Shaikh MA. **Work-related stress and burnout among medical interns in Pakistan: A cross-sectional study.** J Pak Med Assoc. 2021; 71(2):512-7.
4. Gruppen LD, Irby DM, Durning SJ, Maggio LA. **Conceptualizing learning environments in the health professions.** Academic Medicine. 2019 Jul; 94(7):969-74.
5. Sellberg M, Palmgren PJ, Möller R. **A cross-sectional study of clinical learning environments across four undergraduate programs using the undergraduate clinical education environment measure.** BMC Medical Education. 2021 May 5; 21(1):258.
6. Kalsoom I, Mansoor S. **Educational environment of trainees regarding postgraduate gynaecology/obstetric educational environment in allied hospitals of Rawalpindi Medical College, Rawalpindi.** PJMR. 2019 Jun 30; 58(2):93.
7. Riaz Q, Khan MR, Masood S. **Evaluating the clinical learning environment for competency-based postgraduate education in a low-middle income country: Trainee perceptions using PHEEM inventory.** JAMP. 2025 Oct 1; 13(4):303.
8. Han ER, Chung EK. **The perception of medical residents and faculty members on resident duty hour regulation.** KJME. 2020 Mar 1; 32(1):67.
9. Nassar AK, Waheed A, Tuma F. **Academic clinicians' workload challenges and burnout analysis.** Cureus. 2019 Nov 8; 11(11):e6108.
10. 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.** Medical Teacher. 2005 Jun; 27(4):326-31.
11. Hee JM, Yap HW, Ong ZX, Quek SQ, Toh YP, Mason S, et al. **Understanding the mentoring environment through thematic analysis of the learning environment in medical education: A systematic review.** Journal of General Internal Medicine. 2019 Oct; 34(10):2190-9.
12. Albloushi M, Innab A, Mofdy Almarwani A, Alqahtani N, Anazi M, Roco I, et al. **The influence of internship year on nursing students' perceived clinical competence: A multi-site study.** SAGE Open. 2023; 13(3):1-10.
13. Shavoun AH, Mirzazadeh A, Kashani H, Raeeskarimi SR, Gandomkar R. **Evaluation of educational environment using the short-version Postgraduate Hospital Educational Environment Measure (PHEEM): A multicenter study.** JEHP. 2025 Feb 1; 14(1):68.
14. Waheed K, Liaqat N, Ejaz S, Khanum A, Ijaz S, Butt A, et al. **Burnout among gynaecological residents in Lahore, Pakistan: A cross-sectional survey.** J Pak Med Assoc. 2017 Sep; 67(9):1318-22.
15. Sandhu A, Liaqat N, Waheed K, Ejaz S, Khanum A, Butt A, et al. **Evaluation of educational environment for postgraduate residents using Post Graduate Hospital Educational Environment Measure.** J Pak Med Assoc. 2018 May 1; 68(5):790-2.
16. Zahid N, Baig E, Lakhani G, Zafar H, Latif A, Enam SA. **Surgical management during the COVID-19 Era at a private tertiary care hospital of Karachi, Pakistan: A cross-sectional study.** Cureus. 2022; 14(1):e21012.
17. Deng K, Huang C, Liu W, Liu X, Wang J, Huang Z, et al. **Assessment of the family medicine residency training environment in Guangdong, China, based on the PHEEM: A cross-sectional study.** Family Medicine. 2025 Sep 17; 57(9):640.
18. C S, Braganza D, Edwin N. **Quality of life among interns at a southern Indian tertiary care hospital: A cohort study.** Natl Med J India. 2014; 27(4):214-216.
19. Israr Ahmad, Sardar Ali, Asmat Shaheen. **Experiences regarding internship among Bachelor of Science in nursing students in Peshawar: A qualitative study.** J Pak Med Assoc. 2022 Feb. 4; 72(7):1378-83.

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5	Zulfiqar Khan: Data collection.
6	Sarwat Jahan: Study supervision, proof reading.