

CLINICIAN PERSPECTIVE, MOTIVATIONAL FACTORS AND PERCIEVED BARRIERS ON MEDICAL STUDENTS TEACHING: A MULTI-CENTERED CROSSECTIONAL STUDY

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Abstract

Background: Clinical educators are pivotal in medical students training, balancing teaching with clinical care and research. Understanding their motivations, perspectives and perceived barriers is essential to optimize teaching effectiveness and inform targeted interventions.

Methods: A multi-centered cross sectional study was conducted in 2025 at Khyber Teaching Hospital and Northwest General Hospital Peshawar. A structured self-administrated questionnaire assessed motivational factors, teaching perspectives and perceived barriers among 115 clinicians engaged in undergraduate medical education. Items were rated on a 5-point likert scale. Data were analyzed descriptively to identified patterns of motivation, institutional support and challenges.

Results: Participants (Median age was 31 years) represented diverse specialities. Intrinsic motivators predominated with skill enhancement, clinical knowledge retention and personal satisfaction as leading drivers. Clinicians largely integrated teaching into their clinical role and felt confident in student assessment, yet only 36.6% received regular feedback and 51.3% report adequate institutional support. Key barriers included clinical workload/time constraints and student disengagement while burnout was less prominent. Extrinsic motivators such as academic promotion were less influential.

INTRODUCTION

Clinical teachers are central to the successful education of medical graduates. They are a precious resource with a range of competing activities like clinical care and research [1].medical schools have implemented programs aimed at supporting clinician-

educators with formal mentoring, training, and experience in undergraduate medical teaching [2]. According to one study in Australia, university clinical programs rely heavily on external healthcare professionals to provide a range of authentic clinical

training and professional development opportunities for students [3]. According to another study conducted concepts including identity and membership may be pertinent to other community-based teaching settings. We recommend that medical schools review and broaden recruitment methods [4]. According to the other study clinical teachers in medical schools are faced with the challenging task of delivering high-quality patient care, producing high-impact research and contributing to undergraduate medical education all at the same time [5]. According to another study conducted in increasing challenges in recruiting and retaining community-based teaching physicians (e.g., community preceptors) call for a better understanding of motivators and barriers community preceptors perceive in their teaching role. Given the importance of medical school partnerships with community-based sites for student training, it is essential to understand the perspectives of community preceptors as teaching physicians in a context away from the medical school, such as rural, and the factors affecting their career choice to engage in teaching while practising medicine [6]. According to another study conducted, Resident physicians play an important role in teaching the next generation of health-care providers, yet limited research has explored factors influencing effective teaching, such as pre-residency experiences or barriers within residency [7].

This study aims to explore healthcare providers' perspectives, driving factors, and challenges in teaching medical students from different colleges in order to better understand and inform the development of targeted interventions.

Methods:

This study employed a multi centered cross sectional design aimed at exploring clinician perspective, motivational factors and perceived barriers related to undergraduate medical student teaching. The cross-sectional approach was chosen to capture clinician attitudes and experiences at a single point in time across multiple teaching institutions. The study was conducted at two major teaching hospitals in Peshawar, Pakistan: Khyber Teaching Hospital and Northwest General Hospital. Data collection was carried out during the academic year of 2025. The recruitment period spanned three months

during which eligible participants were approached and asked to complete the structured questionnaire. The study population consisted of clinical teachers actively engaged in undergraduate medical education. The inclusion criteria were physicians with primary patient care and teaching responsibilities, clinicians working in academic medical centers or teaching hospitals, program directors, associate directors, core faculty and other clinical educators with roles in student training. However the exclusion criteria included all the visiting medical officers, retired or insufficiently experienced clinicians and all those individuals who were unwilling to participate. A total of 115 clinicians met the inclusion criteria and completed the survey. Sample size was calculated through an online website named as OpenEpi by putting the known population of 162 and confidence interval of 95% and anticipated frequency of 50% we get the total sample size of 115 participants however we print a total of 120 questionnaires among which we filled 118 and among these 118 we neglect the 3 questionnaires due to incomplete response by the consultants and we analyzed the remaining 115 responses and then generate our results on the basis of these responses.

Data were collected through structured self administrated questionnaire consisting of three sections

Section A: Motivational factors which consist of 7 items.

Section B: Clinician perspective on teaching roles consists of 7 items.

Section C: Perceived barriers to teaching consist of 7 items

All items were rated on a 5-point Likert-scale ranging from 1= strongly disagree to 5= strongly agree. The instrument was adopted from previously validated tools used in medical education research and customized for local context. To minimize the selection bias, participants were recruited from two large tertiary care hospitals to ensure representation of diverse specialties. Response bias was reduced by ensuring anonymity and voluntary participation.

Results:

As shown in *table 1.0* the demographics characteristics of the study participants (N=115) reveal a

predominantly male cohort (59.1%) with a median age of 31 years (IQR=9), indicating a relatively young participant group with moderate age variability. The sample was drawn primarily from Khyber Teaching Hospital Peshawar, Pakistan (60.9%) with the remainder from the Northwest General Hospital Peshawar, Pakistan (39.1%). Specialty representation was led by medicine (12.2%) followed by Pediatrics (7.8%), Genral Surgery (6.1%), Orthopedics (5.2%) and dermatology (4.3%) while other specialties collectively accounted for the majority of the participants. The use of median and inter-quartile range for age reporting reflects the non normal

Table 1.0 Showing demographic details of the participants.

Section A: Motivational Factors for Teaching

Variable	Category	Frequency (n=115)	Percentage (%)
Age (Years)	Median (IQR)	31 (9)	-
Gender	Male	68	59.1%
	Female	47	40.9%
Institution	KTH	70	60.9%
	NWGH	45	39.1%
Specialty	MEDICINE	14	12.2%
	PEADS	9	7.8%
	GENERAL SURGERY	7	6.1%
	ORTHOPEDECS	6	5.2%
	DERMATOLOGY	5	4.3%
	Others	73	63.5%



Medical Students

The analysis as shown in table 2.0 of teaching motivations revealed several key findings. The strongest motivator for clinical educators were intrinsic factors, with skill enhancement (A3) showing the highest agreement at 93% (Mean=4.37, SD=0.65) followed by personal satisfaction (A1: 73.9%, Mean=4.20) and clinical knowledge retention

distribution of this variable and the grouping of less frequent speciality into an Others category maintains analytical clarity while acknowledging the diverse professional backgrounds of the respondents. This demographic profile suggests the findings may be particularly relevant to early-career clinicians in major teaching hospitals with applicability across broad range of medical specialities. The gender imbalance noted (nearly 3 ratio 2 of male-to-female) may warrant consideration when generalizing results to more gender-balanced clinical populations.

(A2:80%, Mean=4.13). A strong sense of professional obligation was evident with 76.5% (A4) feeling morally compelled to teach. Extrinsic motivators proved less influential, particularly academic promotion (A6: 60.8%, Mean=3.67) which was the least endorsed factor. The consistency of responses (all SD are less than 1) suggests general agreement among participants about these motivational patterns. The

findings underscore the importance of fostering intrinsic motivation and recognizing the dual benefits

of teaching for both educator development and patient care quality.

Table2.0 Showing Motivational Factors for Teaching Medical Students

Item	Statement	Mean	SD	% Agree (4+5)	Key Interpretation
A1	I find personal satisfaction in teaching medical students.	4.20	0.80	73.9%	Strongest motivator (highest agreement)
A2	Teaching helps me stay updated with clinical knowledge.	4.13	0.82	80.0%	High importance for knowledge retention
A3	Teaching enhances my communication and leadership skills.	4.37	0.65	93.0%	Top perceived benefit (skill development)
A4	I feel morally and professionally obligated to teach future doctors.	4.00	0.91	76.5%	Strong sense of duty
A5	Recognition by students motivates me to teach.	3.72	0.81	62.6%	Moderate motivator
A6	Academic promotion or incentives motivate me to engage in teaching.	3.67	0.98	60.8%	Least motivating factor
A7	Teaching contributes positively to my professional identity.	4.01	0.91	75.6%	Strong link to professional identity

Section B: Clinician Perspectives on Teaching Roles and Responsibilities:

Table3.0 reveal that while most educators strongly integrate teaching with clinical work (70.4%) and feel confident in student assessment (73.1%), critical systemic gaps persist. Only 36.6% receive regular feedback and just 51.3% feel adequately supported by their institution - representing urgent priorities for

improvement. Educators overwhelmingly believe teaching enhances patient care (74.8%), highlighting its clinical value yet nearly a third report feeling underprepared indicating a need for targeted faculty development. These findings suggest that despite strong personal commitment to teaching roles, institutional support structures require significant strengthening to sustain educational excellence and capitalize on educators intrinsic motivation.

Code	Statement	Mean	SD	% Agree (4+5)	Interpretation
Role Perception					
B1	Teaching is an essential part of my clinical role	3.77	0.89	70.4%	Strong integration of teaching and clinical work

Code	Statement	Mean	SD	% Agree (4+5)	Interpretation
Preparation & Support					
B2	I am well-prepared to teach effectively	3.79	0.87	67.9%	Moderate preparation levels
B7	Institution provides adequate teaching support	3.34	1.07	51.3%	Area needing improvement
Teaching Practices					
B3	Confident in assessing student performance	3.98	0.88	73.1%	High confidence in evaluations
B4	Clearly understand teaching responsibilities	3.92	0.87	71.3%	Clear role expectations
B5	Regularly receive teaching feedback	2.91	1.06	36.6%	Critical deficiency
Educational Impact					
B6	Teaching improves patient care	3.96	0.99	74.8%	Strong belief in educational value



Table 3.0 showing Clinical Teaching Perceptions

Section C: Perceived Barriers to Clinical Teaching: Table 4.0 identifies time constraints due to clinical workload (67.8% agreement) and student disengagement (61.7%) as the most critical barriers to effective teaching, warranting immediate intervention. Moderate concerns include insufficient institutional recognition (54.8%) unclear guidelines (50.4%) and administrative burdens (50.9%) highlighting systemic gaps. Notably teaching related

burnout (39.5%) had lower impact suggesting stressors stem from external factors rather than teaching itself. Priority actions include instituting protected teaching time, enhancing student engagement and standardizing support structures. These findings underscore the need to address organizational rather than individual challenges to sustain teaching excellence in clinical environment.

Code	Statement	Mean	SD	% Agree (4+5)	Severity Level
C1	Lack of time due to clinical workload	3.77	0.86	67.8%	Critical

Code	Statement	Mean	SD	% Agree (4+5)	Severity Level
C2	Insufficient institutional recognition	3.42	0.98	54.8%	Moderate
C3	Inadequate physical space/resources	3.32	1.01	49.6%	Moderate
C4	Teaching adds to burnout/stress	2.93	1.01	39.5%	Manageable
C5	Lack of clear teaching guidelines	3.36	1.03	50.4%	Moderate
C6	Student disengagement	3.65	1.06	61.7%	Critical
C7	Administrative interference	3.23	1.10	50.9%	Moderate

Table 4.0 showing Perceived Barriers to Clinical Teaching

Discussion:

Our study captured strong intrinsic motivations among clinician educators with the most endorsed driver being skill enhancement, followed by clinical knowledge retention and personal satisfaction. A majority also felt a moral professional obligation to teach, whereas academic promotion served as the least motivating extrinsic factor. Clinically 70.4% believed that teaching is integral to their clinical role and 73.1% felt confident in assessing students. However systemic gaps were evident only 36.6% received regular feedback and 51.3% felt adequately institutional supported; 67.8 % reported time constraints and 61.7% noted student disengagement as key barriers. These results align directly with our objectives to explore motivational factors teaching perspectives and perceived barriers among clinical educators.

Our findings reinforce the primacy of intrinsic motivations in driving clinician teaching a pattern consistent with Self-determination Theory which posits that autonomy, competence and relatedness fuel sustained engagement [8]. Similar in Australia altruistic motives dominated clinician-educator intent with time constraints emerging as the most common barrier [9]. Our results likewise echo reports from Pakistan identifying time management and workload pressure as prominent obstacles for medical educators [10].

Moreover systemic reviews highlight insufficient institutional support especially in terms of feedback

mechanisms and protected teaching time as key impediments to teaching effectiveness [11][12]. Our data similarly reveal critical deficits in feedback and institutional support underscoring structural rather than individual bottlenecks. Interestingly, burnout was less commonly reported as a direct barrier, suggesting resilience among our cohort or possibly a denial or under recognition of stress. This nuance warrants further qualitative exploration

Given the concordance with broader literature in Pakistan and internationally, our results likely reflect systemic challenges prevalent across similar settings.

Within Pakistan’s Tertiary care hospital context, findings likely generalize to similar urban teaching hospitals in Pakistan, particularly those staffed by early-career clinicians with concurrent patient care and teaching duties.

Beyond local context, shared patterns-intrinsic motivation, time pressures, limited institutional support-mirror global trends [8][9][11][12]. Thus insights may inform broader low and middle income country settings with analogous constraints.

This study highlights a strong inclination of clinician towards intrinsic motivators in teaching with skill enhancement, knowledge retention and personal satisfaction emerging as leading drivers. Our findings resonates with recent work by Al-Attas et al. (2025), who demonstrated that the most compelling motivators for clinical educators were intrinsic such as sharing knowledge and shaping the next generation of

physicians, whereas extrinsic factors like financial incentives played a comparatively minor role. This convergence reinforces the role of intrinsic engagement as a corner stone for sustainable medical teaching [13].

At the same time our results identified time constraints due to clinical workload as the most significant barrier. This concern align with the time and motion analysis of ward rounds conducted by Kilian et al. (2024) which showed that teaching constituted only a quarter of the ward round duration with most time absorbed by clinical responsibilities [14].

Feedback deficiencies also emerged as a critical systemic gap with only 36.6% of our participants reporting regular feedback on teaching performance this reflect broader challenges identified by Zeb et al. (2021), who reported that barriers to effective feedback in medical education included workload constraints, lack of structural feedback opportunities and student apprehension towards critical evaluation. [15]

In addition student disengagement was noticed as a substantial barrier as a cohort echoing the barriers described in a cross sectional survey from Pakistan by Nisar and Waqar (2024). Their study highlighted inadequate time allocation, large students to teacher ratios, and insufficient feedback as the most prominent impediments to effective bedside teaching [16].

Limitations:

This study has several limitations which are:

- Participants were recruited from two tertiary care hospitals in Peshawar using convenience sampling during a defined three month period. Though diversity across specialties was intended representation may be skewed toward clinicians predisposed to educational engagement potentially inflating intrinsic motivational scores.
- The use of self-administrated questionnaire may have prompted socially desirable response particularly around professional duty and teaching value. This could lead to overestimation of positive attitudes and

underreporting of burnout or disengagement.

- Our single time point design prevents casual inference motivation and perception may fluctuate over time on in response to policy changes. Longitudinal follow-up would better capture dynamic trends.

Conclusion:

The analysis reveals a compelling dichotomy between educators' strengths and systemic challenges while intrinsic motivators like skill development (93%) and role clarity (71%) demonstrate strong engagement, critical gaps persists, particularly in time constraints (68%) and feedback systems (36.6%) which severely hinder teaching effectiveness. Moderate concerns such as institutional recognition (62.6%) and resource adequacy (50%), further highlight institutional rather than individual barriers. Notably the relatively low impact of burnout (39%) suggest that educators remain resilient when systems support their relatively low impact of burnout (39%) suggest that educators remain resilient when systems support their work. To sustain excellence institution must prioritize structural reforms protecting teaching time enhancing feedback mechanism and recognizing educators' contributions to align systemic support with educators' intrinsic motivation and clarity of purpose.

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