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Role of a Teacher in Medical Education: A Faculty's Perspective from HBS

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ABSTRACT

Medical educators are vital in delivering knowledge and shaping students' professional behaviour and critical thinking. However, their effectiveness is influenced by institutional support, teaching training, and the ability to adapt to innovative methodologies. **Objectives:** To assess faculty members' perceptions, teaching practices, and institutional involvement in medical education and to explore the association between formal training and innovative teaching methods. **Methods:** A descriptive cross-sectional survey was conducted at HBS Dental College, Islamabad, including 85 faculty members. Data were collected using a structured questionnaire covering demographics, teaching methods, perceptions of educational roles, and barriers faced. Statistical analysis was performed using SPSS version 25.0, applying Chi-square, Mann-Whitney U, and Kruskal-Wallis tests. **Results:** Lecture-based teaching was universal, while small group teaching (68.2%) and PBL (41.2%) were also common. Only 35.3% of faculty had formal training in medical education. A significant association was found between training and the use of innovative methods (p=0.001). Reflective teaching scores were higher among trained faculty (p=0.049). Lack of time was the most reported barrier (69.4%). **Conclusions:** It was concluded that faculty with formal training were more likely to adopt innovative and reflective teaching practices. Addressing institutional barriers and investing in structured faculty development can significantly enhance the quality of medical education.

INTRODUCTION

Teachers are foundational to educational systems, and their role is especially pivotal in medical education, where they serve not only as knowledge providers but also as facilitators of clinical reasoning, role models for professional conduct, and mentors fostering lifelong learning [1]. With the global shift toward competency-based, student-centred education, medical faculty face increasing expectations to integrate diverse teaching methodologies, utilize digital tools, encourage critical thinking, and actively engage students often within rigid institutional structures and considerable time limitations [2, 3]. While medical education has seen substantial innovation worldwide, the pace of adopting such innovative teaching and assessment approaches varies significantly across regions, notably in low- and middle-income countries, including Pakistan [4]. In South Asia, specifically Pakistan, medical educators frequently enter academia without formal pedagogical training, often relying

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predominantly on traditional lecture-based methods. Challenges such as limited institutional resources, inadequate faculty development programs, and a lack of structured support systems further complicate the transition to modern, interactive teaching practices [4, 5]. Although various international studies have explored faculty perceptions and development in diverse settings, research [6], specifically addressing the perceptions, teaching roles, and challenges faced by medical and dental faculty within the unique educational context of Pakistan, remains limited. Particularly scarce are studies examining how formal educational training influences teaching methods, institutional involvement, and the practical barriers faculty encounter in private sector medical institutions.

This study aims to address these gaps by exploring faculty perceptions at Hazrat Bari Imam Sarkar (HBS) Medical and Dental College, Islamabad. Specifically, it investigates faculty teaching practices, institutional engagement, perceived barriers to effective teaching, and the role formal training plays in shaping educational approaches. By providing region-specific insights, the study intends to inform institutional policies, support targeted faculty development strategies, and enhance the overall quality of medical education delivery.

METHODS

This descriptive cross-sectional study was conducted among faculty involved in undergraduate and postgraduate teaching at HBS Medical and Dental College, Islamabad, from May 8, 2023, to October 30, 2023. The study aims to explore the role of teachers in medical education from the perspective of faculty members. The study was approved by the Institutional Research and Ethical Committee (Ref: 3 EC). Participation was voluntary, with informed consent obtained. Confidentiality and anonymity were assured. Data collection took place over one month between January 2023 and February 2023. The total faculty population was approximately 100. Sample size was calculated using Yamane's formula for a known population: n = N. 1 + N(e2). where N = 100, e = 0.05 (margin of error). This yielded a minimum sample of 80. A total of 85 faculty members participated to accommodate potential non-responses. A similar approach was used by Bashir and McTaggart, for institutional-level faculty surveys [7]. Inclusion criteria were full-time faculty involved in teaching with voluntary participation. Exclusion criteria were visiting or part-time faculty, administrative staff, or incomplete responses. A structured, self-administered questionnaire was developed by adapting elements from validated instruments used in previous faculty perception studies [1, 7]. Items were tailored to suit the context of the medical and dental faculty in Pakistan. The tool included constructs commonly used to assess teaching practices, institutional involvement, role perception, and barriers to effective teaching. The tool was reviewed by three medical educationists for content validity and piloted with 10 faculty members (excluded from final data). Feedback led to minor modifications. Reliability was confirmed using Cronbach's alpha: Perception of Teaching Role: $\alpha = 0.81$, Teaching Practice: $\alpha=0.78$, Institutional Involvement: $\alpha=0.73$ and Barriers to Teaching: $\alpha=0.75$. Face validity and expert consensus supported the tool's overall clarity. The questionnaire included five sections: Demographics (age, gender, designation, experience) Teaching Practices (frequency and type of instructional methods), Institutional Involvement (committees, faculty development), Perceptions of Teaching Role (5-point Likert scale) Total score range: 4–20 (minimum per item=1, maximum=5) and Barriers to Teaching (Yes/No items on common challenges) Forms were distributed during meetings and also emailed to ensure maximum participation. Respondents completed them independently. Data were entered into SPSS version 25. Descriptive statistics included frequencies and percentages. Likert-scale responses were treated as ordinal and reported with median and interquartile ranges. The following inferential tests were applied: Chi-square test: Association between categorical variables, Mann-Whitney U test: Perception scores vs. training status. Kruskal-Wallis test: Differences across designations and cramér's V strength of association between categorical variables. A p-value≤0.05 was considered statistically significant. All analyses were performed at a 95% confidence level.

RESULTS

The faculty members who participated in this study predominantly fell within the 25–35 year age group, representing nearly half of the sample (49.4%). Females slightly outnumbered males (52.9% vs. 47.1%). A large majority of respondents were married (75.3%). In terms of academic designation, assistant professors made up the highest proportion (32.9%), followed by associate professors (25.9%) and lecturers (24.7%). Professors accounted for 16.5% of participants. The distribution across departments showed a relatively balanced representation, with basic sciences faculty comprising 40%, clinical sciences 34.1%, and dental clinical faculty 25.9%. Teaching experience varied, with the largest group having over 10 years of experience (38.8%), followed by 5–10 years (31.8%), and less than five years (29.4%). Only a minority of faculty (35.3%) had formal training in medical education, while the majority (64.7%) reported having no such background. Involvement in institutional activities was moderately high, with 44.7% serving on curriculum committees. Regarding teaching load, most respondents taught between 4–6 classes weekly (42.4%), with others

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handling either fewer (28.2%) or more (29.4%) sessions. Notably, engagement in faculty development was encouraging 35.3% had attended at least one development activity in the past year, while 41.2% had participated in multiple sessions, indicating a growing interest in professional development (Table 1).

Table 1: Demographic, Professional, and Institutional Characteristics of Faculty (n=85)

Variables	Category	Frequency (%)
Age (in Years)	25–35	42 (49.4%)
	36–45	21 (24.7%)
	46–55	14 (16.5%)
	>55	8 (9.4%)
Gender	Female	45 (52.9%)
	Male	40 (47.1%)
Marital Status	Married	64 (75.3%)
	Unmarried	21 (24.7%)
Designation	Assistant Professor	28 (32.9%)
	Associate Professor	22 (25.9%)
	Lecturer	21 (24.7%)
	Professor	14 (16.5%)
Departments	Basic Sciences	34 (40.0%)
	Clinical Sciences	29 (34.1%)
	Dental Clinical	22 (25.9%)
Teaching Experience (Years)	<5	25 (29.4%)
	5–10	27 (31.8%)
	>10	33 (38.8%)
Formal Training in Medical Education	Yes	30 (35.3%)
	No	55 (64.7%)
Curriculum Committee Membership	Yes	38 (44.7%)
	No	47 (55.3%)
Classes Taught per Week	1–3	24 (28.2%)
	4–6	36 (42.4%)
	>6	25 (29.4%)
Faculty Development Activities (Last Year)	None	20 (23.5%)
	Once	30 (35.3%)
	More than once	35 (41.2%)

*All values are shown in percentages.

Lecture-based teaching remained universally practised, with all respondents (100%) using this method. However, more interactive approaches were also commonly employed. Small group teaching was reported by 68.2% of faculty, followed by problem-based learning (41.2%) and case-based learning (32.9%). Simulation-based teaching and self-directed learning were less commonly used, cited by 17.6% and 25.9% respectively. A strong majority (78.8%) reported using teaching technology, suggesting increasing integration of digital tools into educational delivery. Among those using teaching technology, multimedia presentations were the most popular tool (60%), followed closely by learning management systems (56.5%) and online quizzes or Google Forms (48.2%). This highlights a substantial reliance on digital platforms to support instructional strategies, particularly for content delivery and student engagement. The most frequently cited barrier was lack of time, reported by 69.4% of participants. Other notable barriers included limited institutional resources (38.8%), an overloaded curriculum (37.6%), and student disinterest (35.3%). Institutional constraints and lack of incentives were also noted by a significant portion (35.3% and 21.2%, respectively). These findings underscore the multifactorial challenges faced by educators in delivering effective instruction (Table 2).

Table 2: Teaching Methods, Technology Use, and Barriers to Effective Teaching

Category	Item	Frequency (%)
Teaching Methods	Lecture-Based	85 (100.0%)
	Small Group Teaching	58 (68.2%)
	Problem-Based Learning (PBL)	35 (41.2%)
	Case-Based Learning (CBL)	28 (32.9%)
	Simulation/Skill-Based Teaching	15 (17.6%)
	Self-Directed Learning (SDL)	22 (25.9%)
Technology Use (General)	Use of Teaching Technology	67 (78.8%)
	No Use of Technology	18 (21.2%)
Technology Tools	Multimedia Presentations	51 (60.0%)
	Learning Management System	48 (56.5%)
	Online Quizzes/Google Forms	41 (48.2%)
Barriers to Teaching	Lack of Time	59 (69.4%)
	Limited Resources	30 (35.3%)
	Overloaded Curriculum	33 (38.8%)
	Student Disinterest	30 (35.3%)
	Institutional Constraints	32 (37.6%)
	Lack of Incentives	18 (21.2%)

Nearly half the faculty (47.1%) strongly agreed they acted as facilitators in learning, and 70.5% viewed themselves as reflective practitioners. A majority also considered themselves role models. However, only 22.4% strongly felt institutionally supported (Table 3).

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Table 3: Faculty Perceptions and Training-Linked Differences

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I Serve as A Facilitator In Student Learning	47.1%	36.5%	10.6%	1.2%	4.7%
I Reflect To Improve My Teaching	37.6%	32.9%	14.1%	8.2%	7.1%
I Act As A Mentor And Role Model	41.2%	38.8%	8.2%	5.9%	5.9%
I Feel Institutionally Supported In My Role	22.4%	29.4%	34.1%	9.4%	4.7%

Faculty with formal training had significantly higher reflective practice scores (U=621.000, p=0.049), suggesting that training fosters self-improvement behaviours. While role model perception varied by designation, the differences were not statistically significant (p=0.174), although assistant and associate professors had relatively higher mean ranks (Table 4).

Table 4: Faculty Perceptions and Training-Linked Differences

Comparison	Groups	Mean Rank	p-value*	Test Statistic
Reflective Practice by Training Status	Trained Faculty	49.80	0.049*	U=621.000
	Untrained Faculty	39.29		
Role Model Perception by Designation	Lecturer	35.62	0.174	H=4.975
	Assistant Professor	48.64		df=3
	Associate Professor	46.18		N=85
	Professor	37.79		

*Statistically significant at p≤0.05

A statistically significant association was observed between formal training and the use of innovative teaching methods (p=0.001). Faculty with training were substantially more likely to adopt innovative strategies (93.3%) compared to those without training (58.2%). The strength of this relationship was moderate, as indicated by a Cramér's V value of 0.369. This finding underscores the value of structured training programs in enhancing teaching innovation (Table 5).

Table 5: Association Between Training and Use of Innovative Teaching Methods

Training Status	Used Innovative Methods (%)	Chi-square (χ^2)	p-value*	Cramér's V
Yes	30 (93.3%)	11.553	0.001*	0.369
No	55 (58.2%)			

*Statistically significant at p≤0.05. Cramér's V is a measure of the strength of association between categorical variables; 0.369 indicates a moderate relationship.

The chart illustrates a clear disparity in the adoption of innovative teaching strategies based on formal training status. Among faculty who had received formal training, a significant majority (93.3%) reported using innovative methods, while only 6.7% did not. In contrast, among those without formal training, 58.2% employed such methods, whereas 41.8% did not. These findings indicate a strong positive association between faculty development and the application of contemporary teaching approaches, underscoring the value of structured training programs in enhancing pedagogical practices (Figure 1).

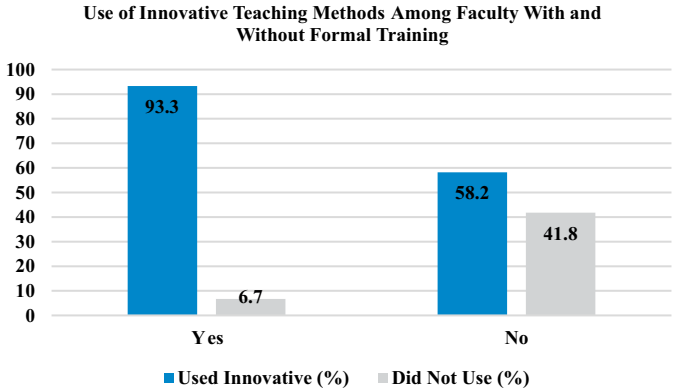

Figure 1: Comparison of innovative teaching method adoption among faculty with and without formal training in medical education (n=85)

DISCUSSION

This study explored the perceptions, practices, and challenges that faculty members face regarding their roles in medical education. The findings reveal that faculty at HBS Medical and Dental College exhibit a thoughtful understanding of teaching responsibilities, largely aligned with international literature, while also pointing toward institutional areas requiring improvement [8-10]. A balanced mix of junior and senior faculty was observed, with nearly half of the respondents aged 25–35 years. This demographic is encouraging, as younger faculty are often more open to adopting innovative teaching methods. At the same time, a substantial portion (38.8%) had over a decade of teaching experience, contributing to a culture of mentorship. This demographic pattern is consistent with findings from Qureshi *et al.*, and Nawabi *et al.*, who observed evolving faculty profiles in South Asian medical

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colleges [11, 12]. Lecture-based instruction remained the dominant method, though interactive strategies like small group teaching, PBL, and CBL were also commonly used. However, modern techniques such as simulation and self-directed learning (SDL) were underutilized, likely due to resource limitations and insufficient faculty development infrastructure. Studies by Catanzano *et al.*, Hennessy et al., and Widayati *et al.*, the importance of institutional investment in simulation labs, digital tools, and SDL frameworks to bridge these gaps [13-15]. One of the most significant findings was the strong association between formal training in medical education and the adoption of innovative teaching methods. Faculty who received such training were significantly more likely to implement diverse instructional approaches. These results align with studies by Challa *et al.*, and B. Hathur and P. Kulkarni *et al.*, which demonstrate that structured development programs not only increase educator confidence but also enhance teaching quality and student engagement [16, 17]. Successful faculty development strategies highlighted in global literature include longitudinal certificate or diploma programs in health professions education, institutional teaching fellowships, peer coaching, and micro-teaching workshops. For example, the Stanford Faculty Development Program (SFDP) and FAIMER fellowship models have shown measurable impact on teaching quality and leadership among faculty. In the local context, expanding short courses through PMDC/PMC or university-affiliated medical education departments could offer sustainable, scalable pathways for faculty growth. The faculty's self-perception was largely positive. Most saw themselves as facilitators and role models and reported practicing reflective teaching. However, institutional support appeared lacking only 22.4% of faculty strongly felt supported in their roles. This gap between individual motivation and institutional reinforcement has been observed in prior research and underlines the need for structured recognition systems such as teaching awards, reduced teaching loads for active contributors, and dedicated faculty development budgets [18-20]. Among reported barriers, lack of time was the most common, noted by nearly 70% of participants. Limited resources, overloaded curricula, and lack of incentives also featured prominently. These systemic challenges reflect a broader need for administrative planning and support. Streamlining academic workloads, introducing digital learning management systems, and incentivizing innovation can reduce faculty burnout and improve teaching effectiveness. Notably, while mentoring was perceived as a shared responsibility across ranks, mid-career faculty (assistant and associate professors) appeared more engaged in such roles. This may be due to their balance of experience and ongoing student contact. Though differences by rank were not statistically significant, the trend supports targeted mentorship initiatives led by mid-career educators.

CONCLUSIONS

This study reinforces the critical role of faculty in shaping the direction and quality of medical education. From the perspective of teachers at HBS Medical and Dental College, it is evident that while faculty generally hold positive perceptions of their roles as facilitators, mentors, and reflective practitioners their ability to implement innovative teaching methods is significantly enhanced by formal training in medical education.

Authors Contribution

Conceptualization: AHA
Methodology: SA, RS, YK, HA
Formal analysis: AHA, SA, YK
Writing review and editing: AHA, SA, US, YK

All authors have read and agreed to the published version of the manuscript

Conflicts of Interest

All the authors declare no conflict of interest.

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