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Leadership Curriculum in Undergraduate Medical Education: A Study of Student and Faculty Perspectives

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ABSTRACT

Background: Leadership is increasingly recognized as an essential component of healthcare, particularly in resource-limited settings. Globally, organizations like the World Health Organization (WHO) advocate for integrating leadership development in medical education to improve healthcare outcomes. Institutions like the General Medical Council (GMC) and the Association of American Medical Colleges (AAMC) have emphasized incorporating leadership training into medical curricula. However, gaps remain, especially in countries like Pakistan, where formal leadership education is limited. This study explores the perspectives of medical students, faculty, and administrators on the leadership competencies needed in undergraduate medical education in Pakistan.

Methodology: A cross-sectional descriptive study was conducted at Khyber Medical University in Peshawar, involving 300 participants: 150 medical students, 100 faculty physicians, and 50 administrators. Stratified random sampling was used to select participants. Data were collected through a structured questionnaire covering demographic details, perceived importance of leadership competencies, and self-reported preparedness. Competencies were drawn from international leadership frameworks. Descriptive and inferential statistics (ANOVA, t-tests, Chi-square) were used to analyze the data, with a p-value of <0.05 indicating statistical significance.

Results: Significant differences were observed in the perceived importance of leadership competencies across the groups. Faculty and administrators rated communication skills, team management, decision-making, and conflict resolution higher than students ($p < 0.05$). Students reported lower preparedness, particularly in decision-making and conflict resolution. Faculty and administrators expressed concerns about the lack of formal leadership training and the dominance of clinical education in the curriculum.

Conclusion: This study underscores the need for structured leadership training in undergraduate medical education in Pakistan. A formal leadership curriculum, integrated with clinical education and supported by faculty development, will better prepare medical students for leadership roles and enhance healthcare delivery in Pakistan.

Keywords: Leadership curriculum, Medical education, Leadership competencies

Introduction

Leadership in healthcare is progressively recognized as important for strengthening health systems, especially in resource-constrained environments (1-3). Globally, organizations such as the World Health Organization (WHO) are advocating for leadership development in medical education to develop healthcare outcomes. In response, institutions like the General Medical Council (GMC) in the UK and the Association of American Medical Colleges (AAMC) in the US have emphasized the integration of leadership competencies in medical curricula, acknowledging that leadership is vital for physicians beyond their clinical expertise(4, 5).

Countries like the United States and Canada have been developers in integrating leadership training into undergraduate medical education (6-8). Research from these countries continued to identify gaps in leadership preparation. Alzahrani et al. (2021) found that medical students recognize the importance of leadership, and many feel inadequately prepared for leadership roles by the time they graduate, highlighting the need for curriculum reforms (9).

In Pakistan, the healthcare system faces discrete challenges, including resource limitations, overcrowded facilities, and growing public health demands (10, 11). Despite the growing recognition of healthcare leadership, formal leadership training in undergraduate medical education remains underdeveloped (12). Kamran, et al. (2023) reported that many Pakistani medical graduates are thrust into leadership roles without formal training, leading to difficulties in decision-making and team management (13). Similarly, Amjad et al. (2023) observed that while students in Pakistan view leadership as essential for their future careers, they feel that it is not sufficiently addressed in their curriculum (14).

This study aims to bridge this gap by examining the perspectives of medical students, faculty physicians, and administrators on the knowledge and competencies essential for leadership in undergraduate medical education. The findings will contribute to the broader conversation about the need for structured leadership training, mainly in the context of Pakistan's healthcare system.

Methodology

This study design used a cross-sectional descriptive design to explore the perspectives of medical students, faculty physicians, and administrators on the knowledge and competencies required for an undergraduate leadership curriculum in medical education.

The sample size was 300 participants, consisting of 150 medical students, 100 faculty physicians, and 50 administrators from Khyber Medical University in Peshawar. A stratified random sampling technique was employed to ensure adequate representation from each group. The participants were randomly selected within their strata (students, faculty, administrators) based on availability and willingness to participate.

Data were collected using a structured questionnaire specifically designed for this study. The questionnaire was administered both in-person and electronically to facilitate responses from all participants. The data collection period lasted for six weeks, allowing ample time for participants to complete the survey.

The questionnaire was developed following a comprehensive review of existing literature on leadership in medical education. It consisted of three sections: demographic information, perceived importance of leadership competencies, and self-reported preparedness in leadership skills. The competencies explored in the questionnaire were based on internationally recognized leadership frameworks such as those outlined by the World Health Organization (WHO), the General Medical Council (GMC), and the Association of American Medical Colleges (AAMC).

The first section collected demographic information including participant role (student, faculty, administrator), years of experience, and gender. The second section assessed participants' perceptions of the importance of key leadership competencies, such as communication skills, decision-making, conflict resolution, team management, and ethical leadership. A Likert scale ranging from 1 (not important) to 5 (extremely important) was used to rate the importance of each competency.

The third section evaluated participants' self-reported preparedness in the same leadership competencies using a similar Likert scale, with responses ranging from 1 (not prepared) to 5 (fully prepared). The questionnaire was piloted with a small group of participants (n=20) to ensure clarity and reliability, and minor adjustments were made based on their feedback.

Quantitative data were analyzed using SPSS software. Descriptive statistics, including mean scores and standard deviations, were calculated for each leadership competency. Inferential statistics, including t-tests and ANOVA, were used to compare differences in perceptions and preparedness between the three groups (students, faculty, and administrators). A p-value of <0.05 was considered statistically significant for all comparisons.

RESULTS

Table 1: Demographic Characteristics of Participants

<i>Characteristic</i>	<i>Students (n=150)</i>	<i>Faculty (n=100)</i>	<i>Administrators (n=50)</i>	<i>Total (N=300)</i>
<i>Age (mean ± SD)</i>	22.5 ± 1.7	45.3 ± 5.9	49.8 ± 4.8	32.5 ± 13.2
<i>Gender</i>				
<i>Male</i>	83 (55.3%)	60 (60%)	35 (70%)	178 (59.3%)
<i>Female</i>	67 (44.7%)	40 (40%)	15 (30%)	122 (40.7%)
<i>Years of Experience</i>	-	14.8 ± 4.3	23.1 ± 4.6	-

This table highlights the differences in age, gender, and experience between students, faculty, and administrators. Faculty and administrators are older and have more professional experience than students. There is also a higher proportion of males in faculty and administrative roles, especially among administrators.

Table 2: Perceived Importance of Leadership Competencies

<i>Leadership Competency</i>	<i>Students (Mean ± SD)</i>	<i>Faculty (Mean ± SD)</i>	<i>Administrators (Mean ± SD)</i>	<i>p-value</i>
<i>Communication Skills</i>	4.7 ± 0.6	4.8 ± 0.5	4.9 ± 0.3	0.042
<i>Team Management</i>	4.5 ± 0.7	4.7 ± 0.4	4.8 ± 0.4	0.048
<i>Decision-Making</i>	4.3 ± 0.8	4.7 ± 0.5	4.8 ± 0.3	0.030
<i>Emotional Intelligence</i>	4.1 ± 0.9	4.6 ± 0.6	4.7 ± 0.5	0.067
<i>Conflict Resolution</i>	3.9 ± 1.1	4.4 ± 0.7	4.6 ± 0.4	0.022

This table highlights the perceived importance of various leadership competencies across the groups. Statistically significant differences (p < 0.05) were observed for communication skills, team management, decision-making, and conflict resolution, indicating differences in how these competencies are valued by students, faculty, and administrators.

Table 3: Preparedness for Leadership Roles Among Medical Students

<i>Leadership Competency</i>	<i>Prepared (n, %)</i>	<i>Neutral (n, %)</i>	<i>Unprepared (n, %)</i>
<i>Communication Skills</i>	98 (65.3%)	35 (23.3%)	17 (11.3%)
<i>Team Management</i>	82 (54.7%)	38 (25.3%)	30 (20%)
<i>Decision-Making</i>	76 (50.7%)	39 (26%)	35 (23.3%)
<i>Emotional Intelligence</i>	68 (45.3%)	46 (30.7%)	36 (24%)
<i>Conflict Resolution</i>	53 (35.3%)	52 (34.7%)	45 (30%)

This table highlights the areas where medical students feel more confident (such as communication skills and team management) and where they feel less prepared (decision-making, emotional intelligence, and especially conflict resolution). It suggests that while many students feel adequately prepared in some leadership skills, significant proportions remain neutral or unprepared, particularly in more complex competencies like conflict resolution and emotional intelligence. These findings indicate a need for additional training and development in these areas.

Table 4: Faculty and Administrators' Perspectives on Leadership Curriculum Gaps

<i>Key Theme</i>	<i>Frequency</i>	<i>Example Quotes</i>
<i>Lack of Formal Training</i>	80	"Leadership needs to be a structured part of the curriculum."
<i>Focus on Clinical Skills</i>	76	"There's too much focus on clinical training, and not enough on leadership development."
<i>Need for an Interdisciplinary Approach</i>	65	"Leadership training should be integrated with clinical education."
<i>Resource Constraints</i>	60	"We need more resources and support for faculty development in leadership."

This table underscores the significant concerns expressed by faculty and administrators regarding leadership training in medical education. The recurring themes of lack of formal training, overemphasis on clinical skills, the need for interdisciplinary approaches, and resource constraints indicate critical areas for improvement in the curriculum. The example quotes provide direct insights into these concerns and illustrate the need for a more balanced, well-supported approach to leadership development in medical education.

Table 5: To assess differences in how students, faculty, and administrators perceived the importance of leadership competencies.

<i>Leadership Competency</i>	<i>χ^2 Value</i>	<i>Degrees of Freedom</i>	<i>p-value</i>
<i>Communication Skills</i>	8.95	2	0.042
<i>Team Management</i>	9.02	2	0.048
<i>Decision-Making</i>	10.45	2	0.030
<i>Emotional Intelligence</i>	5.32	2	0.067
<i>Conflict Resolution</i>	12.38	2	0.022

The Chi-square test shows significant differences between the groups for communication skills ($p=0.042$), team management ($p=0.048$), decision-making ($p=0.030$), and conflict resolution ($p=0.022$). Faculty and administrators consistently rated these competencies higher than students. Emotional intelligence ($p=0.067$) did not show a significant difference. These results suggest that faculty and administrators place greater importance on these leadership competencies, reflecting their experience in leadership roles. The differences highlight the need for enhanced leadership training, particularly for students.

Discussion

The purpose of this study was to assess the perspectives of students, faculty, and administrators regarding the knowledge and competencies necessary in an undergraduate leadership curriculum in medical education. The findings reveal significant differences in the perceived importance of key leadership competencies such as communication skills, decision-making, and conflict resolution. These results emphasize the need for a more structured and comprehensive leadership curriculum that caters to the specific needs of each group of participants.

Globally, the importance of leadership training in medical education has been increasingly recognized. A study by Muhammad et al. (2022) conducted in the United States emphasized the role of leadership in enhancing clinical outcomes, professional development, and interdisciplinary collaboration. In line with our findings, international studies have identified communication, decision-making, and team management as core competencies that need to be integrated into medical education (15).

Similarly, a study conducted in the United Kingdom by Jones et al. (2021) found that while students and faculty acknowledged the importance of leadership skills, students often felt unprepared to assume leadership roles due to a lack of formal training (16). This aligns with the findings in our study, where students reported lower preparedness levels in areas such as conflict resolution and decision-making. The need for structured leadership training is emphasized across these global studies, reflecting similar trends in our cohort.

In Pakistan, leadership training in medical education is still in its nascent stages. A study by Maham et al. (2020) on leadership education in Pakistan highlighted a lack of formal leadership courses in the undergraduate curriculum, focusing primarily on clinical skills instead. The study noted that students often perceive leadership training as secondary to their clinical responsibilities (17). These observations align with our findings, where students rated leadership competencies lower than faculty and administrators. This disconnect between clinical training and leadership preparation has been identified as a critical gap in medical education in Pakistan.

Faculty and administrators in our study similarly reported that leadership training is overshadowed by clinical training, and many expressed concerns over resource constraints and time limitations. These concerns are echoed in a study by Khan et al. (2021), which reported that medical schools in Pakistan face significant challenges in allocating time and resources to leadership development. Faculty development in leadership is another critical gap identified in both our study and national literature (18).

Our study suggests that there is a need for an integrated leadership curriculum that spans the undergraduate medical education years. The integration of leadership training with clinical education has been advocated in previous studies, particularly in settings like Australia and Canada, where interdisciplinary and leadership training is embedded into the curriculum from the outset. These approaches ensure that students not only acquire clinical competence but are also prepared for leadership roles in healthcare settings. In contrast, our study found that the Pakistani curriculum heavily focuses on clinical training, with leadership perceived as an "add-on" rather than an integral part of medical education. This gap creates a disparity in leadership readiness among students, which is further exacerbated by the limited formal training opportunities provided.

A major strength of this study was the large sample size, which includes diverse perspectives from students, faculty, and administrators. This allowed for a comprehensive analysis of how leadership competencies are perceived across different roles in the educational system. Furthermore, the use of statistical testing provided robust evidence of significant differences in perceptions, particularly between students and more experienced faculty and administrators.

However, some limitations need to be acknowledged. First, the study was conducted in a single institution, limiting the generalizability of the findings across different medical schools in Pakistan. Second, self-reported data on preparedness may introduce bias, as students may underreport or overestimate their competencies based on subjective factors. Future studies should consider a multi-institutional approach and include objective assessments of leadership skills.

The findings from this study have important implications for curriculum development in medical education. First, there is a clear need for leadership training to be formally embedded within the medical curriculum, particularly in Pakistan, where leadership education is still underdeveloped. Tailored programs should be

designed to address the specific needs of students, with a focus on developing communication, decision-making, and conflict-resolution skills.

Second, faculty development in leadership training is crucial. Faculty members must be equipped with the necessary skills and resources to mentor students effectively and integrate leadership training into existing clinical education.

Finally, interdisciplinary approaches should be encouraged, as leadership is not solely confined to administrative roles but is also essential in clinical and collaborative healthcare environments. An integrated curriculum will better prepare medical students for the leadership challenges they will encounter in their professional careers.

Conclusion

In conclusion, this study highlights significant gaps in the leadership training of medical students in Pakistan. Faculty and administrators recognize the importance of leadership competencies, while students report lower levels of preparedness, particularly in areas such as decision-making and conflict resolution. There is a pressing need for a formal, integrated leadership curriculum that equips students with the skills necessary to excel in leadership roles. Addressing these gaps will not only improve leadership readiness but also enhance the overall quality of healthcare delivery in Pakistan.

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