

Needs Assessment for a Leadership Course in Saudi Medical Schools: The Student Perspective

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Introduction: Leaders in healthcare no longer need to hold formal management positions; instead, leadership is perceived to be the responsibility of all healthcare professionals. Despite changes in curricula and teaching design, however, this review of the content taught in medical colleges in Saudi Arabia reveals a lack of leadership and a failure to equip young graduates to compete on the global stage. Medical students need leadership skills for patient care, cooperation, and navigating the complex healthcare system. Clinical management skills in hospitals require these talents also. The complexity of healthcare and the impact healthcare executives have on people's lives highlight the importance of these skills. Thus, healthcare practitioners must develop non-technical skills like proactivity, motivation, and change management to lead across professional boundaries and negotiate the increasingly complex healthcare landscape.

Methods: This cross-sectional study combines a quantitative approach with a self-administered questionnaire-based survey. The sampling procedure is a non-probability convenience technique, adapted for 700 male and female undergraduate medical students from four medical colleges.

Results: Of the students, 75.46% had minimal leadership experience and 22.69% had some leadership experience; 3.02% of 464 students considered themselves highly experienced in leadership.

Conclusion: As the needs assessment and other relevant factors show, leadership should be introduced as a skilled subject. There will always be a growing demand for competent medical graduates, who are capable of becoming future leaders. Although elementary leadership concepts remain fundamentally the same, curricular development must focus on the needs of society and stakeholders.

Keywords: medical students, Saudi Arabia, medical education, higher education, curriculum, leadership

Introduction

The launch of the first phase of Saudi Competencies in April 2010 has introduced multiple changes to undergraduate medical education and postgraduate training in the Kingdom of Saudi Arabia.¹ The framework developed in this study represents the seven domains that comprise a doctor's duties and obligations: daily practice, patient care, the community, communication skills, and professionalism, all of which interact with information technology and research. These domains are the cornerstones on which lifelong learners can build much-needed competencies. The second phase of this framework was documented in 2015 and expressed as a three-level model. The Competence-Based Frameworks for Saudi Medical Colleges now define Level II, recognizing the 17 essential competencies of physicians.¹ The third phase will outline Level III, documenting 80 essential learning outcomes that must be achieved by all undergraduate medical programs in Saudi Arabia. This level will vary among undergraduate, postgraduate, and continuous professional development programs, based on the nature of medical education and the practice of specific specialties.

One common theme identified in most competencies is "leadership". Gordon et al identified this theme in 2015, showing that leadership must be understood and demonstrated at all levels of healthcare. In patient care, leadership is coupled with organization. It is no longer the preserve of people in formal management positions, but the responsibility of all healthcare professionals across every level of healthcare organizations.²

A review of the curricula and teaching content of medical colleges in Saudi Arabia shows a gradual shift from a traditional perspective to modular, integrative curricula based on constructivist principles. This approach can provide the competencies that graduates need. However, despite the change in curricular perspective and design, leadership training remains inadequate and is failing to equip young graduates to compete on the global stage.

At the inauguration of Taif University College of Medicine in 2005, a hybrid integrated curriculum was introduced. This design allows both documented and operational curricula to expand students' horizons.² The syllabus topics delivered to students at Taif University College of Medicine are increased as needed; they have enabled students to develop their communication and ethics skills, among many others. However, since its inception, the curriculum has not offered training in leadership skills in a formal setting.

In more developed healthcare systems around the world, undergraduate-level leadership skills constitute a major new focus in teaching.² The principal researcher has written about generic leadership skills adopted from business and management. In the last decade, it has become clear that virtuous medical leadership is a key factor in building an improved healthcare system. As medical careers progress, however, leadership skills have not been taught at the level of technical and academic competencies.³

It is important to clarify that the concept of leadership overlaps with two similar terms, management and administration, yet has distinct differences. Although there are many definitions of leadership, most pundits agree that leaders motivate, inspire, and align strategies to create direction for individuals and the systems they work within.³

Vroom and Jago (2007) have defined leadership as a "process of motivating people to work together collaboratively to accomplish great things." It is important to understand that leadership is a process, not the property of an individual. Leadership is a set of characteristics attributed to individuals who are perceived to be leaders.⁴

The maxim that "Managers are people who do things right and leaders are people who do the right thing" conveys the essence of this issue. It is also important to understand that leadership is an adopted role that should not be confused with a particular post or position. First and foremost, leadership involves motivation, promoting teamwork in pursuit of a common goal that achieves the abundant aims of both leaders and followers.

Participating in leadership classes can empower students, enhance their self-efficacy, and boost the probability of their future involvement in leadership and health advocacy. Additionally, community sponsors consider the experience to be quite important.⁵ Medical students in USA demonstrated constant improvement in their performance across all four measured leadership parameters from the initial to the end course. The skills that exhibited the most significant transformation were those related to innovative thinking and enhancing processes.⁶ However, previous studies found that the primary challenges to implement leadership courses include time constraints, overloaded curriculum, limited financing, and the hierarchical structure of the medical field.⁷⁻⁹ Moreover, the absence of agreement and wide range of differences in how leadership is incorporated into medical education.⁹

Stakeholders in the United Kingdom have voiced their opinions regarding leadership training at undergraduate medical level. Two thousand member strong body said that the new medical students should be actively trained in leadership skills by their medical school.⁸

Methodology

The primary objective of this study is to measure how students perceive the skills that leaders require in the healthcare context as they complete the undergraduate curriculum in Saudi Arabia. A quantitative approach, using a self-administered questionnaire, has been adopted for the data-collection process.

Research Setting

Four medical colleges were selected in accordance with pre-determined criteria, as described in the submitted synopsis. These were:

1. The King Saud University College of Medicine, a large public university in a large city.
2. The Qassim University College of Medicine, a small public university in a medium-sized city.
3. The Sulaiman Al Rajhi College of Medicine, Bukairyah, a private medical college.
4. The Taif University College of Medicine

The four medical schools were selected for the following reasons:

King Saudi University School of Medicine is the oldest medical school in the Kingdom of Saudi Arabia. This research was conducted at Taif University School of Medicine. Qassim University was the first medical college accredited by the NCAAA in the Kingdom of Saudi Arabia. Finally, Alrajhi Medical College is a public-sector institution accredited by NCAAA.

Study Design

This is a descriptive cross-sectional study. Various factors have been used to determine the study sample and population.

The research aim, complications, time limitations, available finance, and prior studies in the same field are some of the factors that matter most when choosing a sample and population for any study. The principal researcher kept these factors in focus when determining the study design.

Study Population and Sampling

All medical students from four medical colleges were selected. The present study uses non-probability convenience technique was adopted on male and female undergraduate medical students from four medical colleges were selected which totaled 700.

Inclusion and Exclusion Criteria

All male and female students studying at the four medical colleges were contacted and those who did not agree to participate in the study voluntarily were excluded.

Data-Collection Instrument

This study uses a survey designed to gather significant data on medical students' leadership training needs and experiences. The survey asks about gender, occupation, academic year, staff academic posts, and administrative duties. The questionnaire also examines participants' leadership course experiences, self-evaluated leadership qualities, and medical school leadership training accessibility and importance. The exact questions concern past leadership training time, types, self-assessed leadership position and competencies, and current leadership experience. Questions include whether leadership courses are in the curriculum, whether the school offers enough leadership opportunities, whether leadership experience will help with job applications, and how long a leadership course should be. The survey examines students' motivations for leadership and their challenges. This extensive survey will help establish leadership training programs for medical students and staff (see [Appendix 1](#)).

The self-reported nature of this method makes it easy to maintain confidentiality, allowing participants to respond to questions easily. However, asking them make decisions too quickly can be counterproductive.¹⁰ In addition, addressing a specific respondent's concern can be ineffective. These two interviewer behaviors can lead to "soft refusal".¹¹

The current data collection instrument has been designed by the authors for the sake of this study and not previously used. Therefore, prior to the distribution of the preliminary questionnaire, a pilot study was conducted, as it was important to determine whether it was relevant and effective or needed further improvements before the actual survey began and to insure the readability and its appropriateness to the targeted population. Pre-testing was undertaken using a small group of people who resembled the target participants.

Data-Collection Procedure

To fulfil the aims of the research, the principal researcher distributed 700 printed questionnaires to male and female students in four medical colleges. Overall, 150 questionnaires were distributed to students at Sulaiman Al Rajhi Medical College; 200 questionnaires were distributed to students at Qassim University College of Medicine; 200 questionnaires were distributed to students at King Saud University College of Medicine; and 150 questionnaires were distributed to students at Taif University College of Medicine. In total, 700 students from four medical colleges were invited to complete questionnaires. The data collection process took a place in the period of March 2019 to May 2019. Once

participants were selected, the principal researcher met them in person, enabling them to provide informed consent and complete the questionnaire.

Data Analysis

Initially the data were tested for their normality to decide whether to use parametric or non-parametric test. Thus, parametric tests were performed due to the normality of the distribution in our data. After that descriptive statistics were calculated for items all questions and percentages, frequencies were calculated. Comparative analysis of demographics and relevant data was done. This was all done using Statistical Package for the Social Science (SPSS) version 23. Descriptive statistics offer a concise overview of survey data by utilizing measures such as mean, median, mode, standard deviation, and variance. These measures provide valuable information about the average, middle, most frequent, and spread of responses, allowing for a better understanding of the central tendency and dispersion of the data. In the case of categorical data, frequencies and percentages are computed in order to analyse the distribution of responses. Inferential comparative analysis involves comparing demographic factors, such as age, gender, and level of study, with survey responses to detect patterns or disparities were utilised. Statistical tests were used such as *t*-tests, chi-square tests, and ANOVA which help to ascertain whether observed differences are statistically significant. Of the 700 questionnaires, 464 (66.28%) were completed and returned by medical students and thus included in the present analysis. An internal consistency assessment of the survey items was undertaken using SPSS, employing a Cronbach's alpha test. The test yielded a reliability coefficient of 0.91, indicating a good level of reliability. This outcome demonstrates exceptional dependability, indicating that the survey items are quite consistent in measuring the targeted constructs.

Ethical Considerations

Institutional Review Board at Taif University has reviewed and ethically approved the study. This research was in accordance with the declaration of King Abdulaziz City for Science and Technology (KACST). All participants were informed of the voluntary nature, confidentiality, and aim of the study and the nature of their participation before they participated in the study. Therefore, an assurance letter attached with questionnaire to explain the nature of the study, importance of their participation and how their data will be treated. The questionnaire was coded to ensure data confidentiality for each institution; only the principal researcher could access the code key.

Results

The participants were 700 students in years 1–6 at Sulaiman Al Rajhi College of Medicine, Qassim University College of Medicine, Taif University College of Medicine, and King Saud University College of Medicine. All students received a brief explanation of the study objectives. Each student spent approximately 10 minutes completing the questionnaire. Incomplete questionnaires were excluded from the study.

Overall, 75 out of a possible 150 (50%) questionnaires were completed by students at Sulaiman Al Rajhi Medical College; 150 out of a possible 200 questionnaires (75%) were completed by students at Qassim University Medical College; 154 out of a possible 200 questionnaires (77%) were completed by students at King Saud University Medical College; and 85 out of a possible 150 (56.66%) questionnaires were completed by students at Taif University College of Medicine. Thus, out of 700 questionnaires, 464 (66.28%) were completed and returned by medical students and therefore included in the analysis (see Table 1).

Table 1 Student Questionnaires

Institutions	Sulaiman Al Rajhi	Qassim University	King Saud University	Taif University	Total
Questionnaires Distributed	150	200	200	150	700
Completed Questionnaires	75	150	154	85	464
	50%	75%	77%	56.66%	66.28%

The participants were 324 male students (see Table 2) and 140 female students at four medical colleges. Thus, the male-to-female ratio was 2.31:1 (see Table 2).

In response to Question 6, *Have you taken a leadership course in the past?* Fifty (10.78%) students said yes and 371 (79.96%) said no; 43 (9.27%) did not recall attending such a course (see Table 3).

As seen in Table 4 Of the 44 students, 11 of those (24.44%) from Qassim University College of Medicine had attended a 6-hour session, 5 attended a session at a school conference, and 6 had attended another event. Eight students at King Saud University Medical College had attended a 4-hour session at a school conference/workshop and 22 had attended a similar session at an outside event. Three students at Sulaiman Al Rajhi Medical College had attended a 4-hour session. A total of 13 students at Taif University College of Medicine had attended such a course.

Question 8 asked whether the participant had undergone any formal leadership training or attended a knowledge-based seminar or lecture. The responses varied from college to college, as did the location of the sessions. This question also asked whether the formal leadership training or seminar was provided within the formal curriculum, at school conference, or by an outside venue.

Table 2 Distribution of Male and Female Students

Distribution of Male Students							
Academic Year	One	Two	Three	Four	Five	Six	Total
Sulaiman Al Rajhi	10	11	8	9	8	5	51
Qassim University	25	24	24	20	14	11	118
King Saud University	17	18	18	19	15	13	100
Taif University	11	11	9	10	9	5	55
Total (academic year)	63	64	59	58	46	34	324
	19.44%	19.75%	18.21%	17.90%	14.20%	10.49%	
Distribution of Female Students							
Academic Year	One	Two	Three	Four	Five	Six	Total
Sulaiman Al Rajhi	6	4	4	4	3	3	24
Qassim University	7	7	6	6	3	3	32
King Saud University	10	9	9	8	10	8	54
Taif University	8	5	5	5	4	3	30
Total (academic year)	31	25	24	23	20	17	140
	20.91%	18.18%	17.27%	16.36%	14.55%	12.73%	
Student Gender Distribution							
Male	Female						
324	140						
69.83%	30.17%						

Table 3 Past Leadership Course Attendance

	Yes	No	Cannot Remember	Total per College
Sulaiman Al Rajhi	3	67	5	75
Qassim University	11	120	19	150
King Saud University	30	112	12	154
Taif University	6	72	7	85
Total	50	371	43	464
	10.78%	79.96%	9.27%	

Table 4 Past Leadership Training

	School Conference	School Course	Course Outside School	Any Leadership Course	Other	Total Per College
Sulaiman Al Rajhi	3	0	0	0	0	3
Qassim University	5	0	0	0	6	11
King Saud University	8	0	0	0	22	30
Taif University	5	0	0	0	1	6
Total per location	21	0	0	0	29	50
	42.00%	0.00%	0.00%	0.00%	58.00%	

When asked whether they felt like leaders in the present (or due to past experiences), only 121 students (26.08%—one-fifth of the total cohort of 464 students) said that yes, they did feel like leaders. A huge majority of 256 students (55.17%) did not feel like leaders; 87 (18.75%) were uncertain (see Table 5).

Thus, in response to the question about leadership abilities, as seen in Table 6 121 students (26.08%) felt they had leadership abilities; 256 out of 464 students (55.17%) felt they had no leadership abilities; and 87 (18.75%) were uncertain.

The following question addressed students' levels of leadership experience in informal settings and their perceived levels of leadership ability, based the past experiences.

An overwhelming number of students: 328 (70.69%) had basic or minimal experience; 122 (26.29%) had some experience; and 14 (3.02%) had high levels of experience in this area (see Table 7).

Only 2 students (0.43%) had taken a leadership course at medical college and both were students at Qassim University College of Medicine; 433 students (93.32%) had not taken such a course; and 29 (6.25%) were unsure. The leadership course was 8 hours long and administered in Year 3 of the curriculum (see Table 8).

When asked whether their medical school provided students with enough leadership opportunities, 274 (59.05%) students said yes and 114 (24.57%) said no (see Table 9); 76 students (16.38%) were not sure what opportunities were provided to help students develop leadership skills.

Table 5 Do You Think You are a Leader?

	Yes	No	Do Not know	Total Per College
Sulaiman Al Rajhi	37	28	10	75
Qassim University	19	96	35	150
King Saud University	23	100	31	154
Taif University	42	32	11	85
Total per response	121	256	87	464
	26.08%	55.17%	18.75%	

Table 6 Leadership Abilities

	Yes	No	Do Not know	Total Per College
Sulaiman Al Rajhi	60	6	9	75
Qassim University	13	68	69	150
King Saud University	29	49	76	154
Taif University	62	10	13	85
Total per response	164	133	167	464
	35.34%	28.66%	35.99%	

Table 7 Current Level of Leadership Experience

	Basic/ Minimal	Some Experience	Highly Experienced	Total per College
Sulaiman Al Rajhi	38	33	4	75
Qassim University	131	19	0	150
King Saud University	117	34	3	154
Taif University	42	36	7	85
Total per response	328 70.69%	122 26.29%	14 3.02%	464

Table 8 Leadership Course in the Present School Curriculum—Years 1–6

	Yes	No	Do not know	Total per College
Sulaiman Al Rajhi	0	70	5	75
Qassim University	2	138	10	150
King Saud University	0	149	5	154
Taif University	0	76	9	85
Total per response	2 0.43%	433 93.32%	29 6.25%	464

Table 9 Leadership Opportunities for Medical School Students

	Yes	No	Not sure	Total per College
Sulaiman Al Rajhi	65	10	0	75
Qassim University	70	44	36	150
King Saud University	68	46	40	154
Taif University	71	14	0	85
Total per response	274 59.05%	114 24.57%	76 16.38%	464

As describe in Table 10, when asked whether leadership experience in school could benefit students as job applicants, 101 students (21.77%) said yes, that leadership experience did benefit graduates during internships, while 113 (24.35%) said no. Most students (250/53.88%) were unsure.

In Question 16, the students were asked how long a school leadership course should last. The response options were: 16 hours, up to 32 hours, around 48 hours, or more than 48 hours.

In response to this question, 171 (36.85%) felt that a maximum of 16 hours would be sufficient, while 234 (50.43%) felt that a leadership-training course should last 32 hours. A sub-group of 46 students (9.91%) felt the curriculum should include 48 hours of leadership training. A very small number (13/1.58%) advocated for more than 48 hours of leadership training in the medical school curriculum (see Table 11).

Table 10 Advantage of Leadership Experience for Job Applications

	Yes	No	Not sure	Total per College
Sulaiman Al Rajhi	28	16	31	75
Qassim University	19	43	88	150
King Saud University	21	36	97	154
Taif University	33	18	34	85
Total per response	101 21.77%	113 24.35%	250 53.88%	464

Table 11 Length of Potential School Leadership Courses

Hours	<16	<32	<48	Greater than 48	Total per College
Sulaiman Al Rajhi	30	29	13	3	75
Qassim University	44	93	13	0	150
King Saud University	65	81	5	3	154
Taif University	32	31	15	7	85
Total per response	171	234	46	13	464
	36.85%	50.43%	9.91%	2.80%	

As mentioned in Table 12, of the 464 students who responded, 387 (83.41%) felt their medical schools should offer a leadership course, while 77 (16.59%) felt that leadership courses should not be part of the medical-school curriculum. This question had two possible response options.

Question 17 asked students why they wanted to hold leadership positions. Four response options were provided. Of the 464 students who answered this question, 326 (70.26%) thought that a leadership position would improve their chances of getting into a good internship program; 16 students (3.45%) felt they would enjoy a leadership position; 85 students (18.32%) felt inspired by seniors whom they perceived to be leaders; and 37 (7.97%) felt they might have a mission to lead, and this was their primary reason for wanting to hold leadership positions (see Table 13).

In response to the final question, "What is the main challenge that student leaders face?" students were asked to choose which of the following skills they lacked: communication skills, decision-making ability, organizational ability, motivation, delegation, conflict management, sense of responsibility, or time management. This question was designed to ascertain how students perceived their situation, given their inability to develop this skill (see Table 14).

A subset of 44 students (9.48%) experienced a lack of communication skills as their main challenge; 67 (14.44%) cited a lack of decision-making ability, and 64 (13.79%) cited organizational ability. Motivation was the key issue for 37 (7.97%) students; delegation of responsibility for 39 (8.41%); and conflict management training for 67 (14.44%). For 87 students (18.75%), the main challenge was lacking a sense of responsibility, while for 59 (12.72%), it was time-management.

Table 12 Need for a Medical School Leadership Course

	Yes	No	Total per College
Sulaiman Al Rajhi	71	4	75
Qassim University	124	26	150
King Saud University	113	41	154
Taif University	79	6	85
Total per response	387	77	464
	83.41%	16.59%	

Table 13 Primary Reason for Taking a Leadership Position

	Sulaiman Al Rajhi	Qassim University	King Saud University	Taif University	Total Responses	
To improve their chances of getting into a good internship program	63	102	94	67	326	70.26%
They enjoy the experience	1	8	5	2	16	3.45%
They are inspired by seniors	3	29	48	5	85	18.32%
They have a mission to lead	8	11	7	11	37	7.97%
Total Students	75	150	154	85	464	

Table 14 Main Challenge for Student Leaders

	Sulaiman Al Rajhi	Qassim University	King Saud University	Taif University	Total Responses	
Poor Communication Skills	5	9	22	8	44	9.48%
Decision Making Ability	11	25	20	11	67	14.44%
Organizational Ability	11	21	21	11	64	13.79%
Motivation	7	11	10	9	37	7.97%
Delegation	5	10	18	6	39	8.41%
Conflict Management	12	22	19	14	67	14.44%
Sense of Responsibility	15	35	21	16	87	18.75%
Time Management	9	17	23	10	59	12.72%
Total Students	75	150	154	85	464	

Discussion

The present study gathered data from students at four medical colleges in the Kingdom of Saudi Arabia, based on pre-determined criteria that the principal researcher discussed with his supervisor and received approval for. This method of selection enabled a broader group of respondents to be contacted. Of the 150 questionnaires administered to students at Sulaiman Al Rajhi College of Medicine, 75 were completed, as were 150 of the 200 administered to students at Qassim University College of Medicine and 154 of 200 administered to students at King Saud University. At Taif University College of Medicine, 200 questionnaires were handed out and 85 were completed and returned by students.

In the local cultural context, academic-research practices are not prevalent.¹² Students are unused to being approached by unknown researchers asking for their views on aspects of their professional lives.

This gender-distribution trend has been seen in previous higher-education research carried out in the Kingdom of Saudi Arabia and various authors have investigated the reasons for this tendency.¹³ Another factor may be the influence of culture, in particular, a societal perception that certain professions require specific traits that are usually seen in males. A lack of available career opportunities has also been validated in prior studies.¹⁴ This pattern differs slightly from the gender distribution seen in Western cultures, which has also been documented. The students were relatively evenly distributed by medical-school year. However, the smallest group (51/10.99%) consisted of students in the final (sixth) year, who may have been difficult to locate during clinical rotations or lacked time to complete the study instrument. The size of this year group is unlikely to have constituted a confounding factor in the present study, which used probability sampling and had adequate representation from each year.

In the past, healthcare-system authorities in the Kingdom of Saudi Arabia have focused on leadership-related faculty-development issues and attempted to overcome various hurdles.¹⁵ A workshop offered by the Association for the Study of Medical Education (ASME), entitled “Preparing Academic Leaders”, was held in July 12–17, 2009 in Edinburgh, UK. The participants were Deans of Faculties of Medicine in the Kingdom of Saudi Arabia and the initiative aimed to advance senior-management leadership skills.

As only 10.78% of the students surveyed in the present study had attended a 4–6-hour leadership course, it is clear that such events have minimal scientific impact; however, this workshop does provide anecdotal evidence of interest in such events.

According to previous study which evaluated a leadership-development program (LDP) for undergraduate medical students and concluded that early LDP experiences had a positive impact; this result could help other medical schools address this important area. The study also showed that the leadership practices of participating students improved immediately after the program. The desired attributes were easy to identify, focus on, and sustain at the group-development level, if not at the individual level. However, administrative and cultural issues—and the participants’ leadership personalities—hindered the application of some leadership skills.

It is important to determine each participant’s starting point before the training begins. In the present study, two questions probed this area of perception and experience. Around a quarter of the students who responded to the questionnaire (121/26.08%) said that they felt like leaders. Of the 464 undergraduate participants, 256 (55.17%) did

not feel like leaders, while 87 (18.75%) were unsure how they felt. These data reveal a significant shift in perception. Although this shift has not yet been evaluated scientifically, it seems possible that the faculty members who perceived themselves as leaders may not have felt the same when they were students; the reverse could be true for current students. Do perceptions change as we progress in our careers? If the answer is yes, then there must be factors that need to be studied. Leadership training should be formalized to increase our understanding of leadership development.

In response to a question about leadership abilities, 121 students (26.08%) felt that they did have leadership abilities and 256 (55.17%) felt that they had no leadership abilities; 87 (18.75%) were unsure of their abilities.

The students' perceptions of their own leadership abilities resemble those reported by previous studies, such as Abbas et al.¹⁶ Their main conclusion is that medical students have mixed attitudes toward aspects of leadership and management, while educational interventions have varied effects on student attitudes.

In the student group, 286 (75.46%) had minimal leadership experience, 86 (22.69%) had some experience, and 14 (3.02%) out of 464 considered themselves highly experienced in the leadership expanse.

These are interesting findings. Similar studies conducted in the United Kingdom have concluded that undergraduate medical students want management and leadership training and understand its importance, but do not all see themselves as leaders.¹⁷ In study cited above, nearly 80% of participants gave themselves high ratings on the ten personal qualities outlined by the Medical Leadership Competency Framework, in sharp contrast to the present findings. This may reflect the present participants' lack of exposure to non-formal leadership roles in the Saudi healthcare system. By contrast, 2349 final-year students at 10 UK medical schools had significant exposure to leadership training during their undergraduate years. It is worth noting that the students in the present study were in years 1–6—at various stages in their training. This factor should be explored further in subsequent studies.

In the present study, only 2 (0.52%) students experienced a leadership course at their medical schools. There have now been sustained but slow attempts to launch leadership training in various parts of the world. India, although still a developing country with the second-highest population in the world, has shown progress in this direction.¹⁸

Another previous published work¹⁹ revealed that leadership courses have strong influence on professional roles included team leaders, increased specialization, support for patients, and information-communication technology. The students expressed uncertainty about power and leadership. These results indicated that the students had an unclear view of the medical profession and healthcare, which seemed to be related to psychological stress and financial burdens. They felt that mentoring, time for reflection, and changes to the curriculum might be needed.

Opportunities provided by faculties can play a role, during problem-based learning sessions, laboratory work, or clinical teaching sessions. More than half of students with 203 (53.56%) in the present study felt that students were given enough leadership opportunities to develop their skills.

Webb et al outlined ways to identify and take initial steps toward developing a leadership module within the existing undergraduate medical curriculum.²⁰ The already “overcrowded” undergraduate medical curriculum at Duke University accommodated such changes; instead of re-inventing the wheel, the study group analyzed the local situation and compared it to international data and best practice; recommendations were then formulated. According to the above cited study leadership should be integrated into the curriculum as a longitudinal theme, like ethical issues and other professional topics, instead of being taught as a separate course. This would not require more content and would be minimally disruptive; if new content were necessary, it could be overlapping. The use of a longitudinal theme would inculcate the situational-leadership mindset into graduates.

Integrating leadership training into the medical curriculum is an intricate and dynamic area. Nevertheless, we place great importance on the requirement for a healthcare-specific environment and the integration of leadership instruction within medical education. Furthermore, this study emphasizes the significance of a competency-based framework that prioritizes evidence-based medicine, practice, and interprofessionalism. The findings of our study, along with other research that has been published,^{12,21} emphasize the importance of implementing a leadership curriculum in medical education that is specifically tailored to the healthcare field and is based on competency.

Study Strengths and Limitations

This study offers valuable insights into the perspectives and experiences of undergraduate medical students at Saudi medical colleges about leadership abilities and training. The unique findings and viewpoints offered in this research, particularly within the setting of Saudi Arabia, add to the current body of literature on leadership education at medical schools, while there may be other studies with similar themes. The research provides valuable insights into the current state of leadership training and the perceived requirements of medical students in Saudi Arabia, thereby making a significant contribution to the growth of the discipline. The results could guide the creation of educational programs and interventions focused on enhancing leadership abilities in upcoming healthcare practitioners within the area. The data includes the response rates and sample sizes for students, which enhances the data's trustworthiness.

The strength of the study is the topic itself: leadership in healthcare systems, a needs assessment. Moreover, this study was clearly the large sample size as only four medical colleges in the Kingdom of Saudi Arabia were focused on. This area needs to be explored formally so that all possible issues and solutions can be recognized. Here, data from four institutions were gathered to generate findings. Certain themes were identified, which can focus the attention of researchers on investigating similar issues in the Kingdom. Although the present study is limited in its design and cannot explore all aspects of a needs analysis, it does provide a pathway for readers and policymakers to review the issue and carry out a formal needs analysis, if needed.

The present study has some limitations. The questionnaire was also limited, but focused on finding answers to specific questions. The methodology adopted (approaching and then reviewing the responses of students) did not leave anything to chance. Although this approach could be cumbersome when using a larger sample size, it provided clarity of thought to the primary investigator at the time of analysis.

Recommendations

The recommendations derived from this study can be understood as having both short-term and long-term implications.

- Optional elective short courses might be introduced from the first to the sixth year of
- Medical college to gauge the students' reaction. This data might be utilized to establish a specific framework for forthcoming material within a particular area. Collaboration among medical colleges can facilitate efficient utilization of resources.
- It is necessary to allocate funds from within the organization for this innovation and streamline the process of accessing those funds.
- Efforts should be concentrated on providing training and support to cultivate expertise in the area of leadership training.
- Emphasis should be placed on organizing workshops and courses specifically aimed at enhancing leadership skills for capacity building.
- It is recommended to implement a nationwide policy for initiating Leadership Training in Undergraduate Medical Education, taking into account the three primary models used in Canada, USA, and UK.

Areas for Further Research

According to this study and analysis of published literature, it can be inferred that

- It is recommended to duplicate this study with a more extensive sample size.
- It is essential to take into account the perspectives of the administration and government policy makers.

Conclusion

There is likely to be an increasing demand for competent medical graduates to become future leaders. Although elementary leadership concepts remain fundamentally the same, curricular development must focus on the needs of society and stakeholders. All recommendations based on this study will have short- and long-term implications. Specific

short courses can be introduced as optional electives in years 1–6 of medical college to assess the student response. Such data can be used to create a local context for future content. Collaborations between medical colleges can be a way of using resources efficiently. Internal funding for innovation must be budgeted for and access simplified. Training and support are also needed to harness experts in the field of leadership training. Capacity-building workshops and courses must concentrate on leadership. A Kingdom-wide policy should be adopted to introduce leadership training for undergraduate medical education, based on the three main models in Canada, the US, and the UK, as well as on the present study and review of the published literature. The present study should be also replicated with a larger sample size. The views of administrative and government policymakers should also be considered.

Data Sharing Statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethical Considerations

Ethical approval of this study was obtained from Institutional Review Board at Taif University (TET- 1-441-45). Therefore, All methods were carried out in accordance with relevant institutional guidelines and regulations.

Acknowledgments

The authors extend their appreciation to Taif University, Saudi Arabia, for supporting this work through project number (TU-DSPP-2024-xx), Taif University, Saudi Arabia. Most of this manuscript is drawn from a Master's dissertation written by the principal researcher, entitled "Needs Assessment for a Leadership Course in Saudi Medical Schools"²²

Funding

This research was funded by Taif University, Saudi Arabia, Project No. (TU-DSPP-2024-xx).

Disclosure

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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