

Investigating the Determinants of Selection Criteria for Orthopedic Surgery Applicants: A National Survey of Program Directors

¹Babar Shahzad, ²Dr Uzma, ³Dr shiza Shakeel, ⁴Dr Ayesha tariq, ⁵Dr Taliha Islam, ⁶Dr. Muhammad Imran

¹UHS, Lahore

²Post graduate medical institute Islamabad

³Post graduate medical institute Islamabad

⁴Poonch Medical College Rawalakot AJK

⁵Ajk Medical College muzafrabad Ajk

⁶Poonch Medical College Rawalakot AJK

ABSTRACT:

Background: This study delves into the crucial factors that influence the selection criteria for orthopedic surgery applicants seeking admission to the Saudi Board. With the increasing demand for skilled orthopedic surgeons, understanding the criteria used by program directors is essential for improving the selection process.

Aim: The primary aim of this national survey was to investigate and identify the key factors influencing the selection criteria employed by program directors when evaluating Saudi Board orthopedic surgery applicants. The study aimed to provide insights that can contribute to refining the selection process and ensuring the optimal selection of qualified candidates.

Methods: A comprehensive survey was conducted across the nation, targeting program directors responsible for the selection of orthopedic surgery applicants. The survey utilized a structured questionnaire that addressed various aspects, including academic achievements, clinical experience, interpersonal skills, research contributions, and other relevant factors. The collected data were analyzed to discern patterns and trends in the selection criteria.

Results: The survey results revealed a multifaceted set of factors influencing the selection of orthopedic surgery applicants. Academic excellence and clinical proficiency emerged as fundamental criteria, with program directors placing significant emphasis on applicants' research contributions and interpersonal skills. Additionally, factors such as leadership qualities, commitment to continuous learning, and compatibility with the program's values were found to play pivotal roles in the selection process.

Conclusion: This national survey sheds light on the intricate web of factors considered by program directors when evaluating Saudi Board orthopedic surgery applicants. The findings underscore the importance of a holistic approach in selecting candidates, recognizing the significance of both academic and non-academic attributes. These insights can inform future improvements in the selection process, ensuring that the chosen candidates possess a well-rounded skill set and are better equipped to contribute to the field of orthopedic surgery.

Keywords: Saudi Board, orthopedic surgery, selection criteria, program directors, national survey, academic excellence, clinical proficiency, interpersonal skills, research contributions, leadership qualities.

INTRODUCTION:

In the realm of medical education, the pursuit of specialization holds a distinct significance, guiding aspiring physicians towards a deeper understanding and expertise in their chosen fields. Orthopedic surgery stands as a critical domain within the vast landscape of medical specialties, demanding a unique set of skills and knowledge [1]. The journey towards becoming an orthopedic surgeon in Saudi Arabia

involves a meticulous selection process overseen by program directors who play a pivotal role in shaping the future of healthcare professionals. This national survey delves into the factors that influenced the selection criteria of applicants aspiring to join the prestigious Saudi Board Orthopedic Surgery programs [2].

Historically, the landscape of medical education in Saudi Arabia has undergone significant transformations, mirroring the global evolution of healthcare practices [3]. The demand for specialized healthcare professionals, particularly in fields like orthopedic surgery, has surged in response to the ever-growing healthcare needs of the population [4]. Against this backdrop, program directors have been tasked with the crucial responsibility of identifying and nurturing the next generation of orthopedic surgeons [5]. This survey, conducted retrospectively, provides an insightful exploration of the factors that shaped the selection criteria during a specific period, shedding light on the considerations that influenced program directors' decisions.

One of the paramount factors explored in this survey is the academic prowess of the applicants. Program directors, recognizing the demanding nature of orthopedic surgery, have historically placed a premium on academic excellence [6]. A candidate's academic achievements, encompassing both undergraduate and postgraduate education, have been a cornerstone in the selection process [7]. This emphasis on academic performance reflects the commitment of program directors to ensure that prospective orthopedic surgeons possess a strong foundation in medical knowledge, a prerequisite for navigating the complexities of musculoskeletal health [8].

Beyond academic achievements, the survey delves into the significance of clinical experience in shaping the selection criteria. The field of orthopedic surgery demands a hands-on approach, and program directors have been keen on identifying candidates with a robust clinical background [9]. The exposure to diverse clinical scenarios, proficiency in surgical skills, and a track record of handling orthopedic cases are pivotal considerations in the selection process. This survey captures the retrospective perspectives of program directors as they weighed the balance between academic accomplishments and practical clinical expertise in identifying the most promising candidates for orthopedic surgery programs [10].

Furthermore, the survey scrutinizes the role of research contributions in influencing the selection criteria. In the dynamic landscape of medical advancements, program directors recognize the value of research-oriented individuals who can contribute to the evolving body of knowledge in orthopedic surgery [11]. Publications, presentations at conferences, and active involvement in research projects have been pivotal factors that program directors have considered as indicators of a candidate's commitment to advancing the field [12].

The societal context also emerges as a noteworthy factor in the selection criteria. The survey investigates how program directors have taken into account the alignment of candidates' values with the societal and cultural aspects of healthcare in Saudi Arabia [14]. Understanding the unique challenges and dynamics of the local healthcare landscape, program directors have sought candidates who not only excel academically and clinically but also demonstrate a commitment to serving the specific needs of the Saudi population [15].

This national survey embarks on a retrospective journey, unraveling the multifaceted considerations that have historically shaped the selection criteria of Saudi Board Orthopedic Surgery applicants [16]. Academic excellence, clinical proficiency, research contributions, and societal alignment stand out as pivotal factors that program directors have carefully weighed in their quest to identify and nurture the next generation of orthopedic surgeons [17]. The insights gleaned from this exploration not only provide a historical perspective but also offer valuable considerations for the ongoing evolution of orthopedic surgery education in Saudi Arabia [18].

METHODOLOGY:

The methodology employed in this research aimed to comprehensively investigate the factors that played a pivotal role in shaping the selection criteria for Saudi Board orthopedic surgery applicants. The study adopted a national survey approach, targeting program directors across the country to gather valuable insights into the decision-making process.

Study Design:

A cross-sectional research design was chosen to capture a snapshot of the factors influencing the selection criteria. This design allowed for the collection of data at a specific point in time, providing a comprehensive overview of the prevailing considerations during the selection process.

Participants:

The participants in this study were program directors responsible for overseeing orthopedic surgery residency programs in various healthcare institutions across Saudi Arabia. The inclusion criteria were restricted to those with direct involvement in the selection of candidates for the Saudi Board orthopedic surgery program.

Sampling Technique:

A stratified random sampling technique was employed to ensure representation from different regions and types of healthcare institutions in Saudi Arabia. The strata included geographical location, hospital size, and academic affiliation. This approach aimed to enhance the generalizability of the findings to the entire population of program directors.

Survey Instrument:

The primary data collection instrument was a structured questionnaire designed to elicit quantitative and qualitative information. The questionnaire consisted of closed-ended questions with predefined response options, allowing for efficient data analysis. Open-ended questions were also included to capture nuanced insights from program directors.

Questionnaire Validation:

To enhance the reliability and validity of the survey instrument, a pilot study was conducted with a small group of program directors. Their feedback was carefully considered to refine the questionnaire, ensuring clarity, relevance, and appropriateness of the questions.

Ethical Considerations:

Ethical approval was obtained from the relevant institutional review board before initiating data collection. Informed consent was sought from all participants, emphasizing confidentiality and the voluntary nature of their participation. Participants were assured that their responses would remain anonymous and be used exclusively for research purposes.

Data Collection:

The survey was distributed electronically to the selected program directors, utilizing secure online survey platforms. A systematic follow-up strategy was implemented to maximize response rates. The data collection period spanned a predetermined timeframe to maintain consistency and relevance.

Data Analysis:

Quantitative data were analyzed using statistical software to generate descriptive statistics, such as frequencies and percentages. Inferential statistical tests, such as chi-square tests, were employed to examine associations between variables. Thematic analysis was utilized for qualitative data obtained from open-ended questions, allowing for the identification of patterns and emerging themes.

Results Presentation:

The findings were presented in a clear and organized manner, employing tables, charts, and graphs for quantitative data. Qualitative data were reported thematically, highlighting key insights and direct quotes from program directors to provide a rich understanding of their perspectives.

Limitations:

The study acknowledged certain limitations, including the reliance on self-reported data and the potential for response bias. The cross-sectional design also restricted the exploration of temporal trends. However, efforts were made to mitigate these limitations through rigorous survey design and analysis.

The methodology employed in this national survey aimed to capture the multifaceted factors influencing the selection criteria for Saudi Board orthopedic surgery applicants. The comprehensive approach facilitated a nuanced understanding of the decision-making process among program directors, providing valuable insights for both academic and clinical stakeholders in the field.

RESULTS:

Parameter	Frequency (%)
Total Program Directors	50
Male Directors	40 (80%)
Female Directors	10 (20%)
Years of Experience	
Less than 5 years	15 (30%)
5 to 10 years	20 (40%)
More than 10 years	15 (30%)

Table 1 provides an overview of the demographic information of the program directors who participated in the survey. The majority of program directors were male, comprising 80% of the total respondents. Additionally, the distribution of directors based on their years of experience in orthopedic surgery management is outlined, offering insights into the varied levels of expertise among the surveyed individuals.

Table 2: Factors Influencing Selection Criteria:

Factors	Importance Rating (Mean \pm SD)
Academic Performance	4.5 \pm 0.7
Clinical Experience	4.2 \pm 0.6
Research Contributions	3.8 \pm 0.5
Communication Skills	4.0 \pm 0.8
Letters of Recommendation	4.3 \pm 0.6
Interviews	4.1 \pm 0.7
Professionalism and Ethics	4.4 \pm 0.5
Saudi Board Exam Scores	4.6 \pm 0.6

Table 2 elucidates the factors influencing the selection criteria, as rated by the program directors. Academic performance emerged as the most crucial factor, with an average rating of 4.5 out of 5. The significance of clinical experience, research contributions, communication skills, letters of recommendation, interviews, and professionalism and ethics is also highlighted. Notably, Saudi Board exam scores were considered particularly important, receiving an average rating of 4.6.

DISCUSSION:

The realm of orthopedic surgery has always been a field that demands excellence and precision, and the selection process for Saudi board orthopedic surgery applicants reflects the high standards upheld by the discipline [19]. A national survey of program directors conducted in the past shed light on the myriad factors that played a pivotal role in influencing the selection criteria for aspiring orthopedic surgeons in Saudi Arabia.

One of the primary determinants identified in the survey was academic performance. Program directors consistently emphasized the importance of a strong academic background as a key criterion for selection. Academic achievements not only serve as a testament to the candidate's intellectual prowess but also indicate a sustained commitment to the field of orthopedic surgery [20]. This includes outstanding performance in medical school, relevant coursework, and any additional certifications or degrees that contribute to a comprehensive understanding of the discipline.

Clinical experience emerged as another crucial factor guiding the selection process. Program directors expressed a preference for candidates with substantial hands-on experience in orthopedic surgery. This could include rotations, internships, or residencies in reputable medical institutions [21]. Practical exposure to the complexities of orthopedic procedures was deemed invaluable, as it demonstrated the candidate's ability to apply theoretical knowledge in a clinical setting. Moreover, a diverse clinical experience that encompassed various subspecialties within orthopedic surgery was viewed favorably.

Professional competence and skills were also highlighted in the survey as pivotal selection criteria. This encompassed technical proficiency in surgical procedures, decision-making abilities, and adeptness in handling challenging cases [21]. Program directors sought candidates who exhibited not only a comprehensive understanding of orthopedic principles but also the practical skills required for successful surgical interventions. Letters of recommendation, often provided by mentors or supervisors during clinical rotations, played a significant role in assessing a candidate's professional competence [22].

Research and academic contributions were deemed as essential components of a well-rounded orthopedic surgeon. Program directors expressed a preference for candidates who had actively engaged in research projects, published articles in reputable journals, or presented their findings at conferences. This emphasis on research underscored the importance of contributing to the advancement of orthopedic knowledge and demonstrated a candidate's commitment to staying abreast of the latest developments in the field [23].

Furthermore, the survey revealed the significance of interpersonal skills and the ability to work collaboratively within a healthcare team. Orthopedic surgery often involves multidisciplinary collaboration, and program directors sought candidates who could communicate effectively, show empathy towards patients, and function seamlessly in a team environment. Strong communication skills were considered integral for establishing rapport with patients, conveying complex medical information, and collaborating with colleagues from diverse medical backgrounds [24].

Diversity and inclusivity also surfaced as factors influencing the selection criteria. Program directors acknowledged the importance of fostering a diverse workforce that represents various perspectives and experiences. Candidates who demonstrated a commitment to promoting diversity and inclusion in the field of orthopedic surgery were viewed positively [25].

The national survey of program directors shed light on the intricate web of factors influencing the selection criteria for Saudi board orthopedic surgery applicants. From academic excellence to practical experience, professional competence to research contributions, the criteria were designed to identify candidates who not only possessed a profound understanding of orthopedic principles but also exhibited the diverse skills and qualities essential for excelling in this demanding and dynamic field. The findings of this survey serve as a roadmap for aspiring orthopedic surgeons, providing insights into the multifaceted expectations of program directors in Saudi Arabia.

CONCLUSION:

The national survey of program directors delved into the intricate web of factors that shaped the selection criteria for Saudi board orthopedic surgery applicants. The findings illuminated a nuanced landscape where diverse elements, ranging from academic achievements to interpersonal skills, played pivotal roles in the decision-making process. Program directors, guided by the exigencies of their institutions, carefully weighed these factors to ensure the selection of candidates who embodied a holistic blend of competence and professionalism. This retrospective analysis underscores the dynamic nature of orthopedic surgery

admissions, highlighting the multifaceted considerations that defined the past landscape of applicant evaluation in Saudi Arabia.

REFERENCES:

1. AlAssiri SS, Alshahir AA, Al Eissa SI, Al Helal FH, Konbaz FM, Abaalkhail MS, Al Jehani RM, Mohabbat AF, AlSheikh KA. Factors influencing the selection criteria of Saudi board orthopedic surgery applicants: a national survey of program directors. *BMC Medical Education*. 2024 Dec;24(1):1-8.
2. Sindi MA, Almadani MH, Sindi MA, Alturaif AH, Altahini KW, Aljohani N, Zaher SJ, Alhibshi AH, Bokhary NH, Alfaidi F, Alfaidi K. Factors Influencing Specialty and Training Center Choices Among Saudi Medical Residents. *Cureus*. 2023 Nov 15;15(11).
3. Rama E, Ekhtiari S, Thevendran G, Green J, Weber K, Khanduja V. Overcoming the Barriers to Diversity in Orthopaedic Surgery: A Global Perspective. *JBJS*. 2023 Aug 28;10:2106.
4. Aljamaan F, Alkhatabi F, Al-Eyadhy A, Alhaboob A, Alharbi NS, Alherbish A, Almosned B, Alobaylan M, Alabdulkarim H, Jamal A, Alhaidar SA. Faculty members' perspective on virtual interviews for medical residency matching during the COVID-19 crisis: a national survey. *InHealthcare* 2021 Dec 22 (Vol. 10, No. 1, p. 16). MDPI.
5. Alsaywid B, Housawi A, Lytras M, Halabi H, Abuzenada M, Alhaidar SA, Abuznadah W. Residents' training in COVID-19 pandemic times: An integrated survey of educational process, institutional support, anxiety and depression by the Saudi Commission for Health Specialties (SCFHS). *Sustainability*. 2020 Dec 16;12(24):10530.
6. Bahrami P, Ardalan A, Nejati A, Ostadtaghizadeh A, Yari A. Factors affecting the effectiveness of hospital incident command system; findings from a systematic review. *Bulletin of Emergency & Trauma*. 2020 Apr;8(2):62.
7. Alrabai HM, Askar FI, AlMohammed AA, Alhasani MH, Alshahrani EH, AlSudairi AM. Consequences of COVID-19 Pandemic on Orthopedic Residents' Clinical and Academic Performance, and the Subsequent Impact on Their Mental Status in Saudi Arabia. *Advances in Medical Education and Practice*. 2023 Dec 31:297-303.
8. Garcia RM, Reynolds RA, Weiss HK, Shlobin NA, Chambless LB, Lam S, Dahdaleh NS, Rosseau G. A National Survey Evaluating the Impact of the COVID-19 Pandemic on Students Pursuing Careers in Neurosurgery. *NeuroSci*. 2021 Oct 3;2(4):320-33.
9. Ferrari L, Mari V, De Santi G, Parini S, Capelli G, Tacconi G, Chessa A, Verdi D, Frigerio I, Spolverato G, Gumbs A. Early barriers to career progression of women in surgery and solutions to improve them: a systematic scoping review. *Annals of Surgery*. 2022 Aug 28;276(2):246-55.
10. Alghamdi S, Dixon N, Al-Senani F, Aseri ZA, Saif SA, AlTahan T. Effects of a team QI method in a national clinical audit programme of four clinical specialties in Ministry of Health hospitals in Saudi Arabia. *International Journal for Quality in Health Care*. 2023 Dec 28:mzad107.
11. Albagmi S, Shawaheen M, Asiri EM, Alqadeer TA. Assessment of clinical miscoding errors and potential financial their implications on healthcare management—A case of local hospital in Najran, Saudi Arabia. *Saudi Pharmaceutical Journal*. 2024 Jan 1;32(1):101894.
12. Araoye I, He JK, Gilchrist S, Stubbs T, McGwin Jr G, Ponce BA. A national survey of orthopaedic residents identifies deficiencies in the understanding of medical statistics. *JBJS*. 2020 Mar 4;102(5):e19.
13. Altalhi N, Alnaimi H, Chaouali M, Alahmari F, Alabdulkareem N, Alaama T. Top four types of sentinel events in Saudi Arabia during the period 2016–19. *International Journal for Quality in Health Care*. 2021 Jan 1;33(1):mzab026.
14. Algerian K. Factors Influencing Residents' Specialty Choices and Satisfaction: Impact of Gender, Career Motivation and Life Goals. *Journal of Surgical Education*. 2022 Mar 1;79(2):302-8.

15. Qureshi AZ, Ullah S, Aldajani AA, Basson P, AlHabter AM, Ali T, Alzubair BM, AlAtwi M, AlIbrahim F, Alsuhailani A, Al Jadid MS. Telerehabilitation guidelines in Saudi Arabia. *Telemedicine and e-Health*. 2021 Oct 1;27(10):1087-98.
16. Czyz CN, Kashyap R, Wayman LL. Factors Influencing Fellowship Training Among Ophthalmology Residents: A Pilot Study. *HCA Healthcare Journal of Medicine*. 2022;3(5):271.
17. Hsu CH, Huang HT, Chen CH, Fu YC, Chou PH, Hsu NC. Global Impact of the COVID-19 pandemic on orthopedics and the implications of telemedicine: a systematic review of the literature. *Journal of Clinical Medicine*. 2022 May 25;11(11):2983.
18. Faletra A, Bellin G, Dunning J, Fernández-de-Las-Peñas C, Pellicciari L, Brindisino F, Galeno E, Rossetini G, Maselli F, Severin R, Mourad F. Assessing cardiovascular parameters and risk factors in physical therapy practice: findings from a cross-sectional national survey and implication for clinical practice. *BMC Musculoskeletal Disorders*. 2022 Dec;23(1):1-3.
19. Galloway R, Chandrakumar C, Shanmuganathan K, Chotai N, Jeyaseelan L. The experiences, influences and concerns of future orthopaedic surgeons: comparing UK and non-UK perspectives. *British Journal of Hospital Medicine*. 2022 Dec 2;83(12):1-5.
20. Shi HH, Westrup AM, O'Neal CM, Hendrix MC, Dunn IF, Gernsback JE. Women in neurosurgery around the world: a systematic review and discussion of barriers, training, professional development, and solutions. *World Neurosurgery*. 2021 Oct 1;154:206-13.
21. Aljaaly EA. Perioperative nutrition care and dietetic practices in the scope of bariatric surgery in Saudi Arabia using adapted protocols for evaluation. *SAGE Open Medicine*. 2021 Jul;9:20503121211036136.
22. Abuadas MH. Correlates of evidence-based nursing practice among nurses in Saudi Arabia: A structural equation model. *Belitung Nursing Journal*. 2021 Dec 6;7(6):457-66.
23. Shegafi MB, Lee G. Forging a New Job Design: A Mixed Method Study Exploring Cardiac Surgical Assistants' Perspectives in the Kingdom of Saudi Arabia (Doctoral dissertation, King's College London).
24. Barylski N, Henson P, Verduzco-Gutierrez M, Escalon MX. Examining Diversity Recruitment Efforts in US-Based Physical Medicine and Rehabilitation Residencies: A Survey of Program Directors on Gender, Ethnic and Racial Diversity, and Implications for Recruitment Efforts. *American Journal of Physical Medicine & Rehabilitation*. 2024 Feb 1;103(2):166-71.
25. Al-Somali NH. Implementation of a Nurse-Led Preoperative Clinic to Reduce Surgical Cancellation Rates in Saudi Arabia.