Original Article:

Understanding Outlook and Conduct of Medical Students Concerning Applications for Postgraduate Training. A Questionnaire Survey

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Abstract:

Background & Aims:
The changing landscape of medical education, with the emergence of multiple medical colleges and diverse curricula, adds complexity to medical students' decision-making process. Specialty medical education plays a crucial role in preparing them for real-world challenges. Ideally, medical curricula should coach students in decision-making. This study examined the attitudes and perceptions of medical students and the challenges they face regarding enrollment in postgraduate specialty education programs.

Methods:
A questionnaire-based survey comprising 17 multiple-choice questions classified intobasic demographics, awareness of postgraduate training, student's outlook, and assessment of postgraduate behavior was administered to medical students.

Results:
Anonymous responses were collected from 109 medical students, primarily in their fourth and fifth years of medical school. Approximately 84.4% of the students had enrolled in medical school immediately after high school, and 92.6% agreed that residency seats were inadequate. Nearly 47.2% appreciated problem-based learning in shaping their professional journeys. Students had mixed opinions on specialty choices, with 32.1% having decided on their desired specialty and 14.7% reporting clarity on their desired specialty. About 61.1% were interested in improving their English language skills and 58.3% were interested in participating in extracurricular activities for postgraduate training.

Conclusion:
This study demonstrated that students' perseverance in improving knowledge and skills maximizes their induction chances and inclination toward postgraduate medical training. This study provides insights into the decision-making and thoughts of medical students, thereby furnishing potential solutions for educational institutions to mitigate the existing barriers in postgraduate training choices.

Keywords:
awareness, medical curriculum, postgraduate training, specialty selection, survey

Introduction:

Medical education has an elaborate curriculum in which the choice of specialization plays a pivotal role[1]. This postgraduate curriculum is meticulously designed to focus not only on the cognitive domain, psychomotor skills development, and subject knowledge acquisition, but also on attitudinal changes and communication skills among budding healthcare professionals[2]. It further primes medical students to hone their teaching skills and become future medical educators[2,3]. During postgraduate studies, students are encouraged to engage in innovative practices and conduct both medical and educational research under the guidance of mentors[4].

By the end of postgraduate training programs, students are expected to be proficient in managing healthcare services at all levels and to demonstrate leadership qualities[5,6]. Furthermore, specialists are expected to provide a standard of care comparable to that of other international healthcare systems[6]. Thus, moving into postgraduate training requires an accurate understanding of the varied specialties and a strategic vision for the future[7].

However, the transition from undergraduate medical school to postgraduate training presents several challenges. Many medical graduates, having completed demanding undergraduate programs, feel relieved—yet unprepared for the unfamiliar and professional responsibilities that follow[6,8]. One of the vital transitions for any medical graduate is this immediate post-graduation period, where they begin assuming the full responsibilities of a physician[7]. The choice between pursuing postgraduate training or entering practice directly becomes a significant dilemma, often prompting students to seek counseling[9].

Globally, the selection of specialty education is influenced by a combination of factors including personal interest, country of residence, working environment, quality of life, role models, and access to technological advancements[10-12]. A study conducted in Jordan to identify the preferred specialties and attitudes of medical students toward postgraduate education showed that approximately 59.3% were interested in medical or non-surgical specialties, and 74.3% preferred to pursue their training abroad[6]. Similarly, a study of medical students at Kuwait University found that 37.2% had decided on their future specialty prior to graduation[13].

In Saudi Arabia, medical education has undergone rapid changes. Over the past two decades, the number of medical colleges has expanded from five to more than twenty-one, introducing

a variety of curricula—ranging from traditional and innovative to problem-based and community-oriented models[14]. Consequently, there are many specialties for medical graduates to consider when planning their postgraduate careers. Ideally, medical curricula should provide structured guidance to support students in this critical decision-making process.

The present study aimed to assess the status of medical university students in Saudi Arabia to gain a more comprehensive understanding of their knowledge, preferences, and perceptions regarding postgraduate medical education, and to identify similarities and distinctions that may enhance the generalizability of the findings.

Methods:

Study design and participants A cross-sectional survey was conducted using an online questionnaire created in Google Forms. The medical school under consideration in the present survey offered a six-year program, which included an additional year dedicated to an internship. In the current survey, all students who were enrolled in the fourth, fifth, and sixth years of the program, as well as those currently undergoing their internship, were included. The questionnaire was disseminated via WhatsApp for one month in May 2021. No exclusion criteria were applied for participation in the study. The questionnaire used in this study was originally developed and validated in previous research at a different university in Saudi Arabia [15]. It contains 17 multiple-choice questions divided into four sections (Additional File 1). The first section includes three questions on basic demographics; the second includes four questions assessing knowledge about postgraduate training; the third contains four questions about attitude; and the fourth includes six questions assessing behavior regarding postgraduate training.

Data collection and analysis:

The data collected from every participant were collated and analyzed descriptively. The responses entered by the participants in the Google Form were automatically processed by Google Sheets, generating numbers and graphs.

Sample size calculation:

Calculating the Sample Size:

The sample size was calculated using the formula for cross-sectional studies, assuming a 95% confidence level, a 5% margin of error, and an estimated proportion (p) of 50% to maximize variability. The initial required sample size was 384. As the total population of medical students in the clinical years was approximately 120, the finite population correction was applied, yielding a minimum required sample size of 91 students. A total of 109 students

participated in the study, resulting in a response rate of 90%, which is considered adequate for cross-sectional research and enhances the validity and generalizability of the findings.

Ethics approval and informed consent:

Ethical approval was obtained from the Majmaah University Ethical Committee (Approval Number:MUREC-April.14/COM-2021/32-1). The initial section of the questionnaire was dedicated to obtaining informed consent from participants. The participants had the freedom to choose whether to complete the questionnaire, and there were no coercive measures or negative consequences associated with deciding not to participate. Furthermore, to ensure the privacy of participants, they were provided the opportunity to complete the questionnaire anonymously using their own mobile devices, thereby affording them full autonomy in participation.

Results:

Participant Characteristics:

A total of 109 medical students aged 22–26 years participated in the study, yielding a response rate of 90%. The majority were fourth-year students (65.1%), followed by fifth-year students (22%). Most participants (84.4%) had enrolled in medical school immediately after completing high school, and 65.1% reported having no relatives in the medical profession (Table 1).

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Table 1: Baseline characteristics of the participating students.

Demographics	Response Options	Participants (%)
Collegiate session	4th Year	65.1
	5th Year	22.0
	6th Year	8.3
	Intern	4.6
Relatives engaged in medical and health services	Both parents	0.0
	One parent	6.4
	Brother/Sister	10.0
	Other	18.3
	None	65.1
Interval between graduating from high school and starting medical school	Immediate	84.4
	1 year	11.9
	≥ 2 years	3.7

Awareness and Understanding of Postgraduate Pathways:

Regarding knowledge of entrance examinations for specialty medical education, 25.3% of students reported limited understanding of the syllabus, while only 16.8% had good knowledge. Similarly, only 8.3% felt well-informed about residency training application procedures, with 38% indicating a lack of knowledge in this area. When asked about awareness of specific postgraduate specialties, only 13.9% were aware of their intended specialty, 23.1% had poor knowledge, and 63% responded neutrally. In terms of self-awareness, 25.2% reported accurately identifying their own weaknesses, while 10.3% found it difficult to assess their shortcomings (Figure 1).

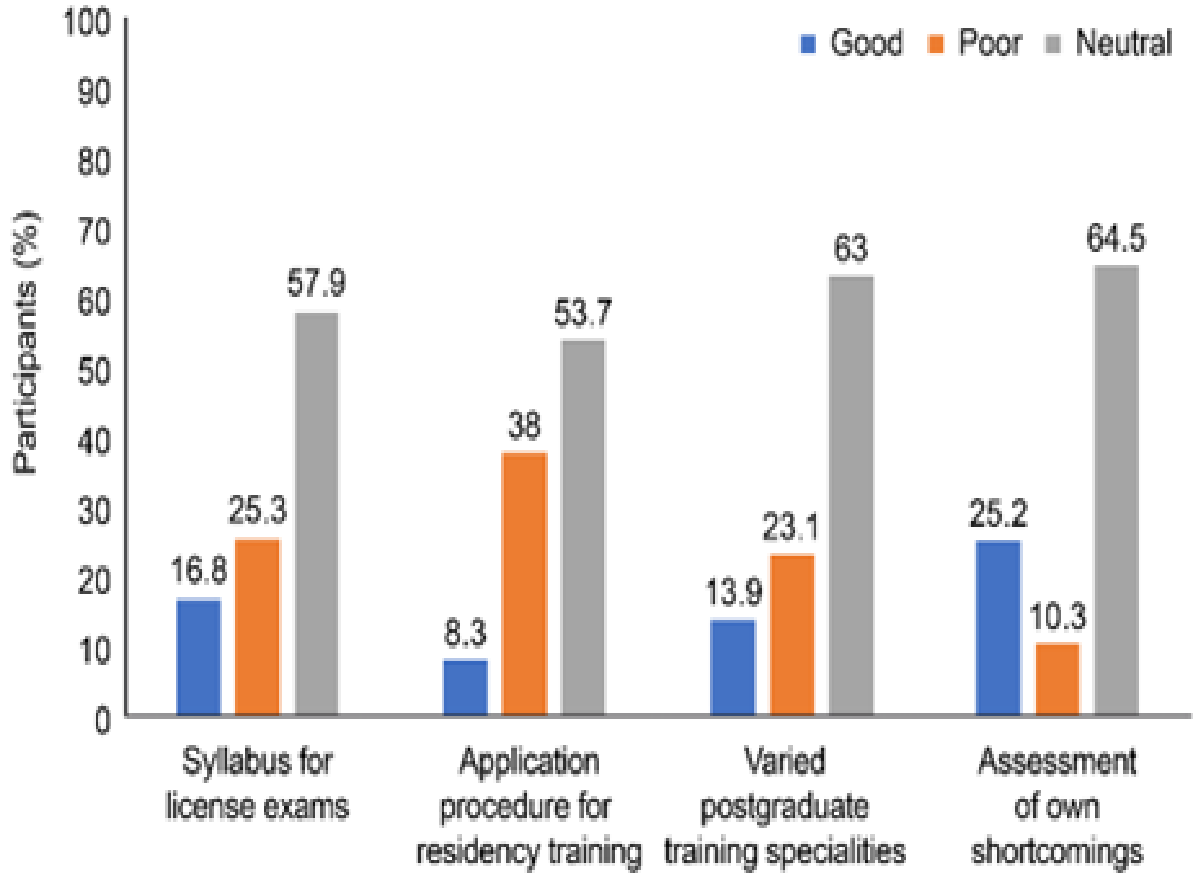
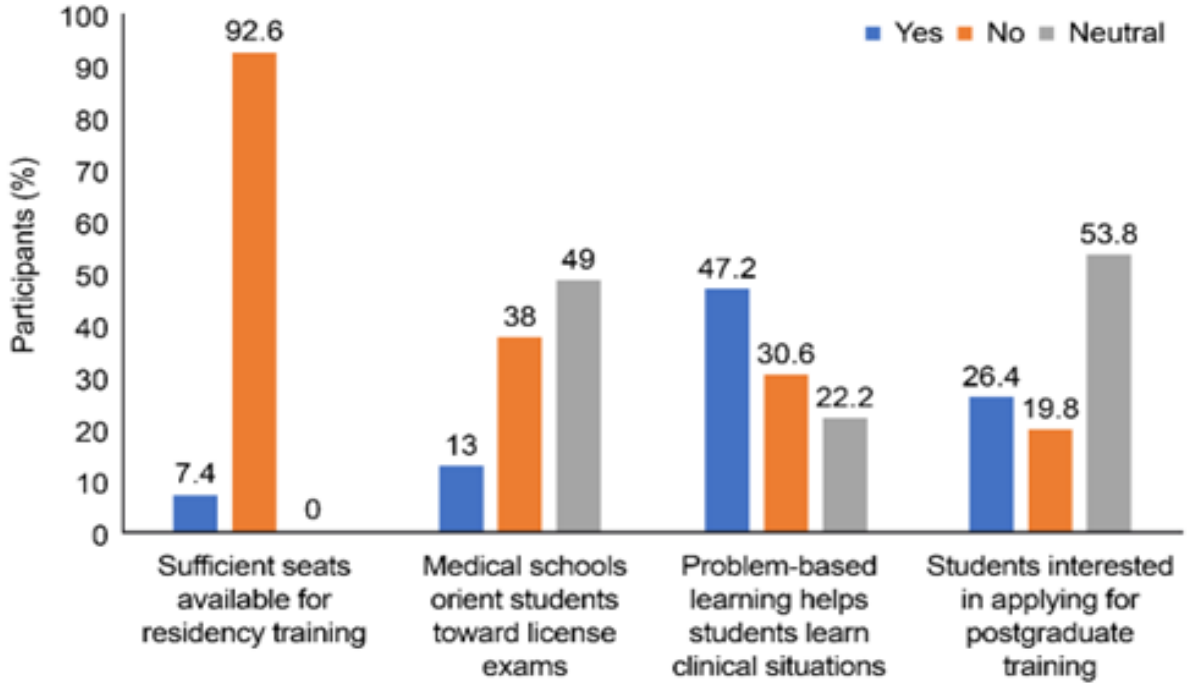


Figure1: Perceptions of Medical School Preparation.

A significant proportion of students (92.6%) believed that residency positions were insufficient. Only 13% reported that their medical school had contributed adequately to preparing them for license examinations, whereas 38% expressed dissatisfaction with their school's efforts in this area. Additionally, 47.2% agreed that the problem-based learning (PBL) approach played a positive role in preparing them for clinical practice (Figure 2).



Specialty Preferences and Career Planning:

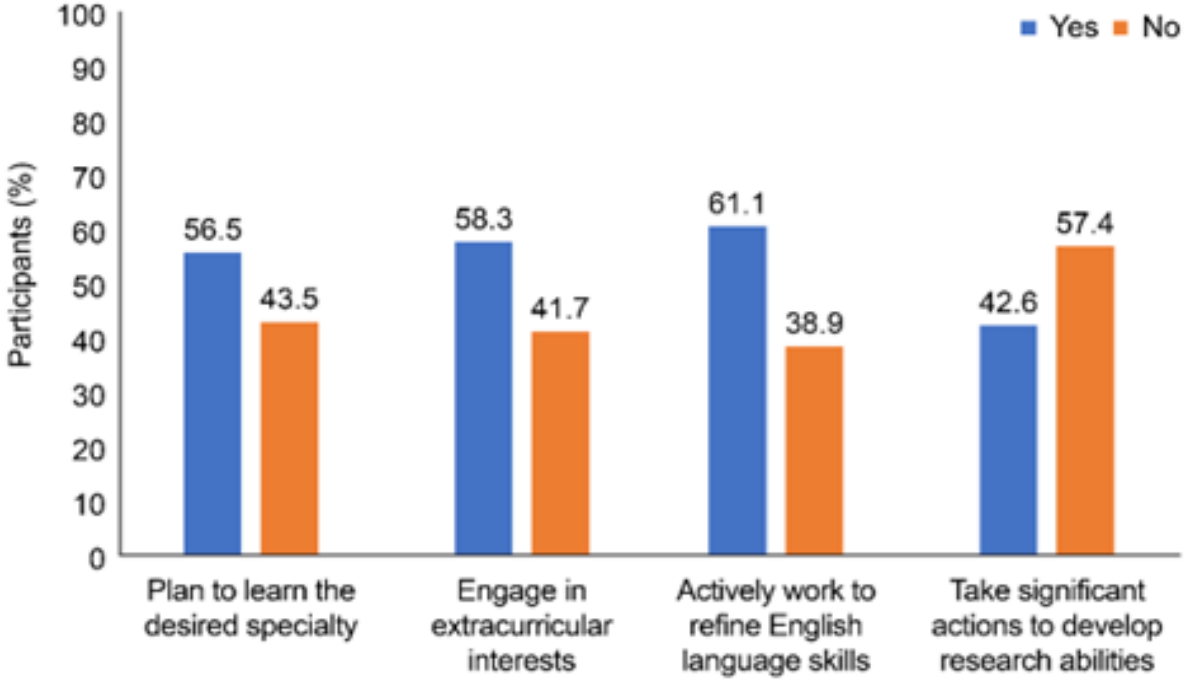
When asked about specialty selection, 32.1% of participants reported having limited options to choose from, and 22% felt it was too early to decide on a postgraduate specialty. Only 14.7% had made a definitive decision. Despite this, 56.5% indicated they had plans to pursue postgraduate training in a specialty of their choice, and 26.4% had already taken active steps toward applying.

Academic and Professional Development Activities:

In terms of study habits, 29.3% regularly used recommended textbooks, while 22.9% rarely consulted them (Table 2). A majority of students were engaged in self-improvement activities: 57.4% participated in extracurricular activities to enhance their residency training prospects; 61.1% reported making deliberate efforts to improve their English language skills; and 57.4% had worked on improving their research abilities (Figure 3).

Table 2: Choice and academic decision of the participants.

Choice	Response Options	Participants (%)
Selected the desired specialty	Yes	14.8
	Few possibilities	32.4
	Excluded some	25.0
	No, it is too early	22.2
	No	5.6
Consulted recommended textbooks	Yes, as the main source	29.6
	Sometimes	20.4
	Only when needed	24.1
	Rarely	23.1
	Never	2.8



Discussion:

This study assessed the readiness of medical students and their perceptions toward postgraduate training. Unlike a similar study conducted in another Saudi Arabian university, where more than half of the respondents were junior students, mainly in their first year[16], most of the respondents in the present survey were fourth-year students. This difference may partially explain variations in the outcomes; while junior students showed a stronger preference for general surgical specialties in the earlier study[16], no clear inclination toward a specific specialty was noted in our cohort. It is possible that with more clinical exposure, senior students develop a more cautious or uncertain approach to specialty selection, reflecting a shift from early enthusiasm to more realistic planning as they better understand the competitiveness and structure of residency programs.

Our study revealed that most students joined medical school immediately after high school and many were unable to assess their own strengths and weaknesses. Furthermore, the majority had no relatives engaged in the medical profession. This may have contributed to a lack of awareness regarding available postgraduate specialties, the application process, and the syllabus for entrance examinations. While similar knowledge gaps have been reported in other Saudi studies, our findings may reflect more localized institutional differences in career counseling and mentoring programs. Compared to settings where mentorship and structured guidance are introduced earlier, our respondents may have had fewer opportunities to receive informed advice on postgraduate planning.

A notable finding in our study was the high proportion of neutral responses in certain items, with up to 63% of participants selecting the neutral option. This trend reflects underlying uncertainty or limited awareness regarding specific aspects of postgraduate medical education. Neutrality in this context should not be interpreted as indifference but rather as a lack of confidence in one's understanding. This finding may also highlight the need for more structured and accessible academic advising systems that provide timely information about postgraduate pathways.

To pursue a medical career, students must consider several career decisions, which can be complicated and confusing[14]. In our survey, an overwhelming majority reported a dearth of seats for residency training—similar to previous findings—but this perception could be influenced by recent national changes in training positions, and may vary across institutions. Less than half of the respondents affirmed the contribution of PBL in preparing them

for their clinical careers. While prior studies reported similar views[15], this consistency across institutions raises questions about whether PBL is effectively integrated into exam preparation or if its role is more beneficial for clinical reasoning rather than standardized assessments.

A study from Japan introduced a two-career model in which medical graduates first train in hospital-based specialties and later transition to outpatient practice[18] . While this model is not directly applicable to Saudi Arabia, the comparison raises important questions about the long-term flexibility and planning in postgraduate medical pathways. Furthermore, previous literature has shown that students often report poor English proficiency as a barrier to academic progress[19.20]. In our study, many students expressed a desire to improve their English skills, suggesting increased awareness of language as a key factor in accessing high-quality training programs and academic resources. This aligns with prior research emphasizing the role of extracurricular activities in enhancing communication skills and reducing language-related anxiety[21].

Strengths and Limitations:

The successful completion of medical education is a complex and prolonged journey in which students are prepared to meet the health needs of society. Therefore, early and informed decision-making is critical for shaping their future career paths.

A major strength of this study is its focus on clinical-year medical students in a rural university setting, using a previously validated questionnaire tool. This approach offers valuable insights into a distinct student population—those who are approaching critical career decisions and who are often underexplored in national-level educational research. In contrast to earlier studies conducted in urban universities and involving students from all academic levels, our study specifically targets students in the final phase of their medical training. Given that Saudi Arabia has over 25 medical colleges with diverse geographical and curricular contexts, our findings add meaningful perspective and help fill a significant gap in the literature.

However, the study also has several limitations. First, the participants may not represent a fully unbiased or diverse sample of medical students, given the limited sample size from a single institution. Second, the rigid structure of the study design, while necessary for standardization, may have constrained the scope of the data collected. Once the survey was distributed, researchers were unable to modify the preset questions in response to emerging themes or unforeseen areas of interest. This limitation may have restricted the depth

and flexibility of the data.

Future research should include more comprehensive, multi-institutional surveys to better understand medical students' awareness of licensing exams, residency applications, and specialty selection. These studies should aim to identify the root causes of knowledge gaps and propose actionable solutions. Collaboration with medical educators, career advisors, and policymakers will be essential to develop targeted strategies that support students in making informed, confident choices about their postgraduate training.

Educational implications:

The understanding, outlook, and conduct of medical students concerning their induction into postgraduate training may be associated with several factors, such as thought process, experience, values, professional integrity, and clinical overview. These statistics provide valuable insights into the preferences and readiness for postgraduate specialty selection of the surveyed individuals. This ultimately shapes the crucial transformation from graduation to applying for postgraduate training. A thorough examination of the issues surrounding students lack of knowledge in crucial areas of postgraduate medical education can lead to the development of informed strategies and resources to better prepare students for their medical careers.

Conclusion:

This study explored the challenges and perceptions of medical students regarding postgraduate training, revealing limited awareness of residency pathways, uncertainty in specialty preferences, and a strong desire to improve English language skills. These findings suggest a need for enhanced career guidance and support during undergraduate training. While the study reflects the perspectives of students from a single institution, the results may serve as a foundation for further multi-center research and discussion aimed at improving student preparedness for postgraduate medical education.

Supplementary material:

File name: Additional file 1.docx

Title of data: Understanding, Outlook, and Conduct of Medical Students Concerning **Application for Postgraduate Training:** A Questionnaire Survey.

Declarations:

Ethics approval and consent to participate:

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and there were no coercive measures or negative consequences associated with deciding not to participate. Furthermore, to ensure the privacy of participants, they were provided the opportunity to complete the questionnaire anonymously using their own mobile devices, thereby affording them full autonomy in participation.

Consent for publication:

Not applicable.

Availability of data and materials:

The dataset supporting the conclusions of this article is available upon reasonable request from the author.

Competing interests:

The authors have no relevant financial or non-financial interests to disclose.

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Authors' contributions:

AAA: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Visualization, Writing - original draft, Writing - review & editing. The main author read and approved the final manuscript.

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References:

1. Chaou CH, Yu SR, Chang YC, Ma SD, Tseng HM, Hsieh MJ, et al. The evolution of medical students preparedness for clinical practice during the transition of graduation: a longitudinal study from the undergraduate to postgraduate periods. BMC Med Educ. 2021;21(1):260.
2. Harden RM. Trends and the future of postgraduate medical education. Emerg Med J. 2006;23:798-802.
3. Mittal N, Medhi B. New undergraduate medical education curriculum. Indian J Pharmacol. 2022;54:73-6.
4. Sandhu D. Postgraduate medical education Challenges and innovative solutions. Med Teach. 2018;40:1-3.
5. Johnston BT, Boohan M. Basic clinical skills: don't leave teaching to the teaching hospitals. Med Educ. 2000;34:692-9.
6. Al-Beitawi SN, Al-Shatanawi TN, Qudsieh SA, Abu Marar EI, Al Zoubi MS, Al-Zubi M. 6th year medical students future specialty preferences: a cross-sectional study. Ann Med Surg (Lond) 2021;66:102373.
7. Sá J, Strand P, Hawthorne K, Da Silva A, Kitto S. Transitions in medical education: Filling in the blanks. Educ Méd. 2021;22: 346-51.
8. Mohammed TA, Abdulrahman

AA, Saud KA, Alaa NT. Specialty preferences and factors affecting future career choice among medical graduates in Saudi. J Family Med Prim Care 2020;9:1459-63.

9. Shrestha B, Pokhrel YR, Butterworth K. Determinants of postgraduate students? choices of speciality. J Nepal Med Assoc. 2016;54:1-7.
10. Levaillant M, Levaillant L, Lerolle N, Vallet B, Hamel-Broza JF. Factors influencing medical students? choice of specialization: A gender based systematic review. E Clin Med. 2020;28:100589.
11. Abdulghani HM, Al-Shaikh G, Alhujayri AK, Alohaideb NS, Alsaeed HA, Alshohayeb IS, et al. What determines the selection of undergraduate medical students to the specialty of their future careers? Med Teach. 2013;35:S25-S30.
12. Al-Ansari SS, Khafagy MA. Factors affecting the choice of health specialty by medical graduates. J Family Community Med. 2006;13:119-23.
13. Al-Fouzan R, Al-Ajlan S, Marwan Y, Al-Saleh M. Factors affecting future specialty choice among medical students in Kuwait. Med Educ Online 2012;17:19587.
14. Telmesani A, Zaini RG, Ghazi HO. Medical education in Saudi Arabia: A review of recent developments and future challenges. East Mediterr Health J. 2011;17:703-7.
15. Bin Ahmed IA, Alrajeh SA, Alrajeh AA, Aldughaither AS, Kilani AA, Almotairy YM, et al. Knowledge, attitude, and behavior of medical students from a Saudi university toward postgraduate training. Cureus 2019;11:e6356.
16. Bin Abdulrahman KA, Alobaida BA, Alzabadin RA, Alosaimi AK, Almutairi NS, Alayed FA, et al.Future dreams of junior and senior medical students at a public Saudi medical school. Adv Med Educ Pract. 2022;13:1187-95.
17. Wood DF. Problem based learning. BMJ. 2003;326:328-30.
18. Saigal P, Takemura Y, Nishiue T, Fetters MD. Factors considered by medical students when formulating their specialty preferences in Japan: findings from a qualitative study. BMC Med Educ. 2007;7:31.
19. Alharbi B. Saudi English for specific purpose students? attitudes toward the learning of English language: an investigative study. Front Educ. 2022;7:998531.
20. Alnasser SMN. Exploring English as a foreign language instructors? self-derived English language policies at higher education level: a case study in the Saudi context. Fron Educ.

2022;7:865791.

21. Alnaeem L. Involvement in extracurricular activities and overcoming high levels of communication apprehension among Saudi EFL majors. Arab World Eng J. 2021;12:185-208.