

Medical Students' Perceptions of the Family Medicine Course at Yarmouk University: A Cross-Sectional Study

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Purpose: This study aimed to assess medical students' perceptions of the Family Medicine (FM) course at Yarmouk University, focusing on course experience, teaching methods, learning resources, and overall satisfaction.

Methods: This cross-sectional study was conducted at Yarmouk University between November 2023 and January 2024. An online questionnaire was distributed to 5th- and 6th-year medical students who had completed the FM clerkship. The survey assessed students' perceptions of course structure, educational experience, assessment methods, learning outcomes, and attitudes toward FM as a future career. Data were analyzed using chi-square and binomial tests. Binomial logistic regression was performed to identify predictors of overall course satisfaction and intention to pursue FM residency.

Results: A total of 224 medical students participated, 62.9% had completed the Family Medicine course in their 5th year and 37.1% in their 6th year. Overall, 66.1% were satisfied with the course, 87.1% reported benefiting from it, and 92.4% reported better understanding of family medicine after the rotation. Most students considered the lectures comprehensive (81.3%), while 81.7% reported that large group size negatively affected their learning. Although 80.8% considered family medicine important in practice, only 44.2% indicated that they would choose it as a future career. In multivariable analysis, taking the course in the 6th year, finding lecture content adequate, course duration sufficient, and the number of instructors adequate were significant predictors of course satisfaction. Perceiving family medicine as offering a competitive salary and believing that patients rely on family physicians predicted intention to pursue family medicine residency.

Conclusion: The Family Medicine course was generally well perceived and improved students' understanding of the specialty. Satisfaction was mainly related to educational factors, whereas career intention was more strongly linked to perceptions of the specialty itself. These findings support continued refinement of the course to improve student experience and strengthen interest in FM.

Keywords: evaluation, education, family medicine, course, university, medical students

Introduction

Family medicine (FM) is one of the most integral courses offered to undergraduate medical students across numerous universities globally, including Yarmouk University in Jordan, where it has been taught since the establishment of the Faculty of Medicine in 2012. The importance of family medicine lies in its comprehensive coverage of essential topics that prepare medical students to become competent general practitioners (GPs), ensuring their readiness to provide safe and effective patient care after graduation. As healthcare systems worldwide face increasing demands for primary care services, the role of family medicine education becomes ever more critical in producing well-trained physicians capable of addressing diverse patient needs in community settings.

Over the years, the family medicine curriculum at Yarmouk University has undergone iterative revisions and refinements to increase its effectiveness and adapt to the evolving needs of clinical practice in Jordan. The most recent

curriculum revision was undertaken in 2023, where the FM course was set to be taught in the 5th year of medical school instead of the 6th year.

Students' perceptions of the FM rotations are important because these perceptions provide valuable insights into the effectiveness of teaching methods, the sufficiency of resources, and how well the course supports students' professional development. Student feedback may also help identify factors that influence satisfaction with the rotation and interest in pursuing FM as a future career. Such evaluations are essential for refining the curriculum and ensuring that it meets the evolving academic and practical needs of medical students while preparing them to succeed in an increasingly complex healthcare environment.^{1,2}

Previous studies have shown that family medicine training can positively influence students' learning experiences, satisfaction, and attitudes toward the specialty. A study conducted at the Faculty of Medicine, University of Kelaniya, Sri Lanka, examined the effectiveness of family medicine education in a one-month attachment program. The findings revealed that the students were generally satisfied with the program, especially with regard to hands-on patient learning, direct teacher feedback, and interactive seminars. However, the study also identified areas for improvement, including better access to resources, more opportunities for skill building, and greater space for student engagement. These insights emphasize the importance of continuous assessment and feedback in refining medical education programs to meet students' needs.³

Another study focused on faculty development and highlighted the importance of preparing faculty members for their diverse responsibilities. While faculty development is crucial, comprehensive analyses that identify best practices in family medicine education remain limited. Research has shown that the success of faculty development in family medicine depends on several factors, including peer support, program flexibility, alignment with medical practice, thorough assessments, and adequate resource allocation (financial and time). Addressing these elements is essential for optimizing the impact of faculty development in family medicine education.⁴

A study conducted at King Saud University in Saudi Arabia assessed the impact of a six-week family medicine course on students' attitudes, career inclinations, and self-perception. The results suggest that learner-centered, community-based approaches are increasingly being adopted in medical education, with family medicine gaining greater importance owing to its relevance in both community and hospital settings.⁵

Another study conducted in Saudi Arabia between 1995 and 1997 surveyed fourth-year medical students before and after completing a family medicine course using a standardized Likert scale. Data from 147 participants indicated a significant increase in students' self-reported knowledge and clinical skills, as well as a growing interest in family medicine as a potential career choice. However, opinions on creative learning and moral issues did not change significantly. These findings suggest that family medicine courses can positively influence students' attitudes and career perspectives, although there is room for further exploration of educational strategies.⁶

Despite the increasing literature assessing family medicine education across various institutions, there are still significant gaps. Many of the existing studies have been conducted within medical education systems that are different from those in the Arab region, which limits the generalizability of their results to the Jordanian context. Furthermore, while several studies have focused on student satisfaction or attitudinal changes, few have provided a comprehensive evaluation that addresses teaching, learning and assessment methods. Until today, there has been no published study evaluating the family medicine rotation at Yarmouk University or, as far as we know, within Jordanian medical schools in general. Addressing this gap is crucial for identifying areas of improvement, enhancing students' understanding, and encouraging greater interest in pursuing family medicine as a career.

Therefore, this study aimed to explore medical students' perceptions of the family medicine rotation at Yarmouk University, with a focus on the teaching and learning methods, the learning environment, and the availability of resources that support training. It also aimed to assess students' perceptions of family medicine as a specialty, identify factors associated with satisfaction with the rotation, and examine predictors of students' intention to pursue family medicine residency training after graduation.

Materials and Methods

Study Design and Setting

This observational cross-sectional study was conducted at Yarmouk University, Jordan, to investigate undergraduate medical students' perspectives on the Family Medicine clerkship. Data were collected between November 2023 and January 2024.

Curriculum Description

In Jordan, the medical degree is structured as a six-year undergraduate program according to the ministry of higher education standards. The curriculum is divided into three pre-clinical years followed by three clinical years. Clinical clerkships are undertaken during the 4th, 5th, and 6th years.

At the time of the study, the Family Medicine clerkship was delivered to both 5th and 6th year students, due to curriculum adjustments. Therefore, the study population included 5th and 6th year students who had completed the course, allowing for the inclusion of students with immediate and recent exposure to the clerkship.

The course is a 4.5 credit hour submajor over four weeks, during which students complete requirements and prepare for the final exam.

The course includes 28 lectures combining faculty-delivered sessions and student-led seminars. Clinical practice occurs four days a week at the University Family Medicine Clinic and Ministry of Health Care Centers.

At the start of the course students receive a study guide outlining learning objectives, activities, resources, and assessment methods. At the University Family Medicine Clinic, students engage in history taking, physical examination, management planning, and procedural skills including blood pressure measurement, ECG interpretation, vision assessment, and ENT examinations. This develops consultation skills in gathering patient histories, communicating information, decision-making, and follow-ups. In general practice, students maintain records of patients using structured sheets and produce case reports demonstrating family medicine principles in patient care. The final assessment includes written and practical components. The written part comprises structured essay questions (mini-OSCE) within a 30-minute duration. Students complete three OSCE stations assessing history taking, examination, and counseling, each lasting seven minutes. At the end of the academic year, students take a final exam with 50 multiple-choice questions testing knowledge and clinical reasoning.

Study Population and Sample

The study population included all medical students at Yarmouk University who had completed the Family Medicine clerkship. The inclusion criteria comprised medical students in their 5th or 6th academic year who had undertaken and successfully passed the clerkship at the time of data collection. Students who had not yet completed the FM course, declined to participate, or submitted incomplete questionnaires with substantial missing data were excluded from the study.

A minimum sample size of 212 was calculated via Cochran's formula with a 95% confidence interval, a 5% margin of error and a population proportion of 80%, that was estimated based on a literature review.^{3,7}

Study Instrument

An online questionnaire containing two sections with 30 close-ended questions, was developed to investigate students' attitudes toward the Family Medicine course at Yarmouk University in Jordan. This survey was formulated based on a review of the literature and was adapted from the Family Medicine Attitudes Questionnaire Short version (FMAQ-S), a previously validated instrument, along with items derived from a published study conducted in Sri Lanka that assessed medical students' perceptions of the FM course.^{3,7} Instead of Likert scales, dichotomous (Yes/No) questions were employed for the survey items to minimize central (neutral) tendency bias and reduce participants' cognitive load.

The first section included 18 items evaluating the course structure and educational experience. The second section comprised 11 items assessing students' perceptions of Family Medicine as a professional specialty and their intention to pursue FM as a future career. Internal consistency reliability was assessed using Cronbach's alpha coefficient for the

overall scale and each subscale. The overall survey demonstrated acceptable internal consistency with a Cronbach's alpha of 0.758. No demographic information was collected.

Data Collection

The self-administered online survey was distributed to the students via their university Email accounts through Microsoft Outlook on November 8, 2023. A total of 864 fifth-year students and 636 sixth-year students were invited to complete the questionnaire. The participants were provided with a brief explanation of the study's objectives and instructions on how to complete the questionnaire. They were assured of the confidentiality of their responses and their right to withdraw from the study at any time. To reduce social desirability bias, the survey was administered anonymously, and no identifying information was collected. To minimize selection bias, the survey was distributed to the entire cohort of eligible students rather than a convenience sub-group. The survey portal closed on January 5, 2024. Out of the 1500 eligible students enrolled in the 5th and 6th years of the medical program at Yarmouk University, 224 valid responses were included in the analysis, resulting in a response rate of 15%.

Data Analysis

Quantitative data analysis was conducted using SPSS version 24 and Jamovi 2.7. One sample chi square and binomial tests were applied to determine whether students' responses to the survey items reflected a statistically significant trend. Associations with students' satisfaction and residency intention were assessed using chi-square (χ^2) tests. Variables with a p-value <0.20 in bivariate analysis were included in the binomial logistic regression models.

Two binomial logistic regression models were constructed. The first model aimed to demonstrate the predictors of students' satisfaction with the course, while the second model assessed for the predictors of students' intention to pursue Family Medicine Residency. Model fit for the logistic regression was evaluated using Akaike Information Criterion (AIC), and pseudo- R^2 measures (Nagelkerke). Adjusted odds ratios (AORs) and 95% confidence intervals (CIs) were reported where appropriate. Statistical significance was determined by $p < 0.05$.

Ethical Approval

Ethical approval was obtained from the Institutional Review Board (IRB) of Yarmouk University on the 30th of October 2023. Informed consent was obtained from all participants prior to their participation in the study. All participants consented to the publication of their anonymous responses.

Results

Participant Characteristics

Based on the gathered data, the majority of participants (62.9%, $n=141$) enrolled in the family medicine course during their 5th year, while 37.1% ($n=83$) did so in their 6th year.

Course Structure and Educational Experience

Students' responses to questions regarding course structure and educational experience are summarized in [Table 1](#). There was a notable difference in students' responses regarding the comprehensiveness of the lectures; the majority, 81.3% ($n=182$), felt that each lecture provided enough information to fully cover the topic, whereas 18.8% ($n=42$) disagreed, $p < 0.05$. Additionally, there was a significant disparity concerning the extent to which all domains of FM were covered. Most students, 68.8% ($n=154$), believed that the lectures and seminars fully addressed the core domains of family medicine, while 31.3% ($n=70$) did not share this view, $p < 0.05$.

According to the survey, 50.4% ($n=113$) of students favored lectures delivered by family medicine doctors, while 25% ($n=56$) preferred a combination of seminars and lectures, and 15.6% ($n=35$) opted for a clinical setting. Only 8.9% ($n=20$) favored student-led seminars, $p < 0.05$. On the other hand, the survey showed no significant difference regarding course duration; 47.8% ($n=107$) felt that the 4-week course was adequate, whereas 52.2% ($n=117$) disagreed, $p=0.548$.

Table 1 Medical Students' Responses to Course Structure and Educational Experience Questions (N=224)

Question	Response	n (%)	p-value
Was each lecture's content sufficient to cover the intended topic?	Yes	182 (81.3%)	<0.05
	No	42 (18.8%)	
Did lectures and seminars adequately cover the core domains of FM?	Yes	154 (68.8%)	<0.05
	No	70 (31.3%)	
What is your preferred instructional method for the course?	Lectures by FM doctors	113 (50.4%)	<0.05
	Seminars & lectures	56 (25%)	
	Clinical settings	35 (15.6%)	
	Student-led seminars	20 (8.9%)	
Was the 4-week duration sufficient for theoretical and clinical components?	Yes	107 (47.8%)	=0.548
	No	117 (52.2%)	
Which academic year is most appropriate for this course?	5th year	155 (69.2%)	<0.05
	4th year	43 (19.2%)	
	6th year	26 (11.6%)	
Was clinical training time sufficient to achieve learning objectives?	Yes	141 (62.9%)	<0.05
	No	83 (37.1%)	
Did clinical sessions sufficiently cover course topics?	Yes	107 (47.8%)	=0.548
	No	117 (52.2%)	
Did group size negatively impact the learning process?	Yes	183 (81.7%)	<0.05
	No	41 (18.3%)	
What is the ideal number of students per clinical group?	4–6	91 (40.6%)	<0.05
	6–8	90 (40.2%)	
	8–10	37 (16.5%)	
	>10	5 (1%)	
Did university hospital availability enhance the educational experience?	Yes	203 (90.6%)	<0.05
	No	21 (9.4%)	
Were the training facilities adequate for the course curriculum?	Yes	128 (57.1%)	<0.05
	No	96 (42.9%)	

Regarding the preferred year for taking the course, 69.2% (n=155) of students preferred the 5th year, followed by 19.2% (n=43) and 11.6% (n=26) of the students who preferred it in the 4th year and the 6th year, respectively, $p < 0.05$.

Most students, 62.9% (n=141), believed the clinic time was sufficient, while 37.1% (n=83) thought it was inadequate, indicating a need for more clinical exposure, $p < 0.05$. The study however, revealed a divided opinion on the sufficiency of clinical sessions for course coverage, with 52.2% (n=117) finding them inadequate and 47.8% (n=107) believing they were sufficient, $p = 0.548$.

A significant majority, 81.7% (n=183), felt that large group sizes negatively impacted the educational process, while 18.3% (n=41) disagreed, $p < 0.05$. This suggests that reducing group sizes could enhance educational outcomes. Additionally, 40.6% (n=91) preferred groups of 4–6 members, 40.2% (n=90) favored 6–8 members, 16.5% (n=37) chose 8–10 members, and less than 1% (n=5) preferred groups larger than 10, $p < 0.05$.

The survey also found that 90.6% (n=203) of students thought that university hospitals are beneficial to education, while 9.4% (n=21) thought otherwise, $p < 0.05$. Opinions were split on whether the hospitals or care centers are qualified to cover all aspects of the FM curriculum, 57.1% (n=128) considered them adequately qualified, while 42.9% (n=96) doubted their suitability, showing a significant difference between the groups, $p < 0.05$.

Assessment Methods and Learning Outcomes

Based on the survey findings, 65.6% (n=147) of respondents preferred a combination of OSCE (objective structured clinical exam) and mini-OSCE for exams, rather than just the traditional OSCE. In contrast, 34.4% (n=77) favored the conventional OSCE format, $p < 0.05$. Additionally, 73.7% (n=165) of participants found that incorporating clinical case

Table 2 Medical Students' Responses to Assessment Methods and Learning Outcomes Questions (N=224)

Question	Response	n (%)	p-value
Was a combined OSCE/mini-OSCE more effective than OSCE alone?	Yes	147 (65.6%)	<0.05
	No	77 (34.4%)	
Did case and article presentations improve learning?	Yes	165 (73.7%)	<0.05
	No	59 (26.3%)	
Did the course improve theoretical knowledge and clinical skills?	Yes	195 (87.1%)	<0.05
	No	29 (12.9%)	
Was the number of teaching staff sufficient?	Yes	175 (78.1%)	<0.05
	No	49 (21.9%)	
Who is your preferred clinical session instructor?	Both	126 (56.3%)	<0.05
	MOH physicians	20 (8.9%)	
	University Doctors	78 (34.8%)	
Did the rotation improve your understanding of the specialty?	Yes	207 (92.4%)	<0.05
	No	17 (7.6%)	
Were you satisfied with the overall course delivery?	Yes	148 (66.1%)	<0.05
	No	76 (33.9%)	

presentations and medical articles into evaluation marks was advantageous for their learning, while 26.3% (n=59) disagreed, $p < 0.05$.

Significantly, 87.1% (n=195) reported benefiting from the Family Medicine course, whereas only 12.9% (n=29) did not, $p < 0.05$. Moreover, 78.1% (n=175) believed there were enough educators to adequately cover the course material, while 21.9% (n=49) disagreed, $p < 0.05$.

The data indicated that 56.3% (n=126) of participants preferred clinical sessions led by both Ministry of Health (MOH) physicians and university family medicine doctors, whereas 34.8% (n=78) favored only university family medicine doctors, and 8.9% (n=20) preferred solely MOH physicians, $p < 0.05$.

The study showed that after the rotation, the majority of students, 92.4% (n=207), had a better understanding of the family medicine specialty, with only 7.6% (n=17) not experiencing improved understanding of the specialty, $p < 0.05$.

Furthermore, 66.1% (n=148) were satisfied with the overall course delivery, while 33.9% (n=76) were not, $p < 0.05$. **Table 2** Summarises students' responses to questions regarding the assessment methods and learning outcomes of the FM course.

Perceptions of Family Medicine Specialty and Career Intentions

We also evaluated medical students' perceptions of the family medicine specialty and training. Most students, 79.9% (n=179), believed family medicine doctors were satisfied with their jobs, whereas 20.1% (n=45) thought otherwise, $p < 0.05$. Regarding salary perceptions, 42% (n=94) of respondents believed family medicine physicians earned high salaries, while 58% (n=130) disagreed, $p = 0.019$.

Additionally, 68.8% (n=154), agreed that working as a family medicine doctor is easy, while 31.3% (n=70) disagreed, $p < 0.05$. A significant majority 95.5% (n=214) emphasized the importance of good communication skills between doctors and patients in clinical settings, $p < 0.05$.

Most participants, 90.6% (n=203), believed that family medicine physicians' involvement in research on family medicine topics would help them stay up-to-date with medical changes and guideline updates, $p < 0.05$. Similarly, 81.2% (n=182) agreed on the importance of annual exams for family medicine doctors to keep them informed about changes in medical guidelines and treatments, $p < 0.05$.

The study revealed that 90.6% (n=203) of the respondents believed it is crucial for family medicine doctors to undergo communication skills training to effectively handle patients of all ages, $p < 0.05$. There was no notable difference between those who felt patients could trust family medicine doctors with serious health issues (54%, n=121) and those who disagreed (46%, n=103), $p > 0.05$.

Table 3 Medical Students' Perceptions of Family Medicine Specialty and Career Intentions (N=224)

Question	Response	n (%)	p-value
Are family physicians generally satisfied with their careers?	Yes	179 (79.9%)	<0.05
	No	45 (20.1%)	
Do FM physicians receive competitive salaries?	Yes	94 (42%)	0.019
	No	130 (58%)	
Is working as an FM physician generally easy or difficult?	Easy	154 (68.8%)	<0.05
	Hard	70 (31.3%)	
Is effective doctor–patient communication essential in FM?	Yes	214 (95.5%)	<0.05
	No	10 (4.5%)	
Should FM physicians receive formal communication skills training?	Yes	203 (90.6%)	<0.05
	No	21 (9.4%)	
Can patients rely on FM physicians for serious health problems?	Yes	121 (54%)	0.256
	No	103 (46%)	
Does a long-term doctor–patient relationship improve patient care?	Yes	204 (91.1%)	<0.05
	No	20 (8.9%)	
Does FM play an essential role in everyday life?	Yes	181 (80.8%)	<0.05
	No	43 (19.2%)	
Are you considering a residency in FM?	Yes	99 (44.2%)	0.095
	No	125 (55.8%)	

Moreover, 91.1% (n=204) of participants agreed that fostering a doctor-patient relationship is essential for accurate treatment, $p < 0.05$. Additionally, 80.8% (n=181) of the participants considered the family medicine specialty important in practical settings, while only 19.2% (n=43) disagreed, $p < 0.05$.

Interestingly, the study showed a minor, non-significant difference between students who would choose family medicine as a future career (44.2%, n= 99) and those who would not (55.8%, n=125), $p > 0.05$. Table 3 summarizes medical students' perceptions of family medicine specialty and career intentions.

Factors Associated with Overall Course Satisfaction

Bivariate chi-square test was used to identify the several course-related factors that are significantly associated with students' satisfaction. The academic year of taking the FM was significantly associated with the overall students' satisfaction, ($\chi^2=10.6$, $p=0.001$). Sixth-year students reported higher satisfaction rate (79.5%) compared to fifth-year students (58.2%). Perceptions of lecture adequacy were also significantly associated with satisfaction. Students who felt lecture content was sufficient reported higher satisfaction (70.3%) than those who did not (47.6%; $\chi^2=7.85$, $p=0.005$). Similarly, students who believed lectures covered all FM core domains had markedly higher satisfaction rates (74.0% vs 48.6%; $\chi^2=13.9$, $p<0.001$).

Regarding course duration, students who found the four-week duration sufficient were significantly more satisfied compared to those who did not, 83.2% and 50.4% respectively, ($\chi^2=26.7$, $p<0.001$).

Additionally, positive responses about clinical sessions ($\chi^2 = 12.1$, $p < 0.001$), adequacy of instructor numbers ($\chi^2 = 27.5$, $p < 0.001$), and availability of training centers ($\chi^2 = 14.7$, $p < 0.001$) were all significantly associated with higher rates of satisfaction.

Factors Associated with Intention to Pursue Family Medicine Residency

Bivariate analysis also revealed several factors significantly associated with the intention to pursue a FM residency. Students satisfied with the FM course were more likely to report an intention to pursue FM (49.3%) compared with those who were not satisfied (34.2%) ($\chi^2 = 4.65$, $p = 0.031$). Perceived job satisfaction in FM was also associated with greater residency intention (48.6%), compared with 26.7% among students who did not believe FM provides job satisfaction ($\chi^2 = 7.02$, $p = 0.008$).

Perception of FM as a high-salary specialty showed a strong association with career intention. Among students who believed FM offers a high salary, 60.6% expressed interest in FM residency, compared with 32.3% among those who did not ($\chi^2 = 17.8$, $p < 0.001$). Similarly, belief that patients rely heavily on FM physicians was strongly associated with residency intention, with 61.2% expressing interest among those who agreed with this statement compared with 24.3% among those who did not ($\chi^2 = 30.7$, $p < 0.001$).

Students who perceived FM as practically important were also more likely to consider pursuing the specialty (48.6% among those who agreed compared with 25.6% among those who did not; $\chi^2 = 7.48$, $p = 0.006$). Additionally, perceived availability of FM training centers was significantly associated with increased residency intention, with 53.1% of students expressing interest compared with 32.3% among those who did not perceive such availability ($\chi^2 = 9.65$, $p = 0.002$).

Predictors of Satisfaction with the Family Medicine Course

A binomial logistic regression model was constructed to identify independent predictors of course satisfaction. The model demonstrated good fit, with a Nagelkerke R^2 of 0.388, an overall model significance ($\chi^2 = 73.7$, $p < 0.001$), and an AIC value of 229.

Students who undertook the FM course during sixth-year were significantly more likely to report course satisfaction than fifth-year students (AOR = 3.15, 95% CI: 1.47–6.73, $p = 0.003$). Perception that lectures adequately covered course content (AOR = 2.87, 95% CI: 1.37–5.99, $p = 0.005$), perception that the course duration was sufficient (AOR = 3.38, 95% CI: 1.63–7.03, $p = 0.001$), and perception that there were enough instructors involved in the course (AOR = 2.92, 95% CI: 1.28–6.65, $p = 0.011$) were also significant predictors of satisfaction. Other variables included in the model were not statistically significant.

Predictors of Family Medicine Residency Intention

A second binomial logistic regression model was developed to identify predictors of intention to pursue Family Medicine residency. The model showed acceptable fit, with a Nagelkerke R^2 of 0.252, an overall significance ($\chi^2 = 46.7$, $p < 0.001$), and an AIC value of 277.

Perception of Family Medicine as a high-salary specialty (AOR = 2.05, 95% CI: 1.10–3.81, $p = 0.024$) and perceived patient reliance on Family Medicine physicians (AOR = 3.38, 95% CI: 1.81–6.33, $p < 0.001$) were significant predictors of intention to pursue a Family Medicine residency. Other variables included in the model were not statistically significant.

Discussion

Student feedback plays a crucial role in determining whether students have met the learning objectives of a training program. Such feedback is invaluable for designing, developing, and refining educational programs, ultimately improving the quality of teaching and learning. It benefits not only the students but also the faculty and the institution as a whole.^{8,9} Evaluation provides guidance for necessary adjustments to courses and curricula, allowing for continuous improvement.

This study revealed medical students' perceptions of the Family Medicine course at Yarmouk University, Jordan, and identified key factors associated with course satisfaction and FM residency intentions. These findings contribute to the growing body of literature on medical education in the Middle East region and offer practical recommendations for curriculum improvement.

The majority of students (81.3%) expressed satisfaction with the comprehensiveness of lecture content, consistent with findings from similar studies in Sri Lanka and Saudi Arabia.^{3,5} However, when examining whether the lectures and seminars adequately addressed the core domains of family medicine, 68.8% of the respondents felt that the coverage was sufficient, whereas 31.3% raised concerns about possible gaps. These findings suggest the need for ongoing review and improvement of teaching methods to ensure comprehensive coverage across all areas of family medicine.

A study conducted in Saudi Arabia found that students had mixed preferences regarding teaching approaches, where 39% preferred modified problem-based learning (PBL), 36% favored traditional PBL, and 25% preferred regular lectures.⁹ In contrast, the majority of the students in this study (50.4%) preferred lectures delivered by doctors, while smaller proportions preferred a combination of seminars and lectures (25.0%), clinical settings (15.6%), or student-led

seminars (8.9%). The preference for physician-led lectures may reflect students' desire for expert guidance and professional clinical insights, suggesting that direct interaction with experienced practitioners remains highly valued in medical education.

The survey results also revealed that 81.7% of the students reported a negative impact on their learning experience due to large group sizes. This finding raises significant concerns about the dynamics of group learning and suggests that large group settings may hinder individual participation and engagement. This concern is supported by research indicating that smaller groups allow for more hands-on learning and intellectual engagement.¹⁰ A study on ideal group sizes in medical simulation found that while clinical skills can be taught in larger groups, learners consistently prefer smaller group settings for enhanced learning outcomes.¹⁰ Our findings that 80.8% of students preferred groups of 6–8 members or smaller align with recommendations for optimal clinical education group sizes.

The difference in opinions about whether the course length was sufficient (47.8% vs 52.2%) highlights an important area for curriculum review. The four-week duration of the family medicine rotation at Yarmouk University is relatively short compared to programs in other institutions. For instance, a study at King Saud University employed a six-week course duration.⁵ While some programs extend to eight weeks or more.¹¹ The finding that duration adequacy was a significant predictor of satisfaction (AOR=3.38) showcases the importance of this factor in educational planning.

Opinions were significantly divided on whether clinical sessions adequately addressed all course content. While 47.8% of the respondents felt that the clinical sessions were sufficient, 52.2% raised concerns, highlighting the need for continuous evaluation and improvement of clinical sessions. This feedback is meaningful for educational institutions, as addressing the concerns of the majority can help improve the quality of clinical training, ensuring that all course material is thoroughly covered.

With respect to assessment methods, students showed a clear preference for combined OSCE and mini-OSCE assessment (65.6%), indicating strong support for this integrated approach. This preference suggests that students recognize the value of a multifaceted assessment model that better evaluates specific competencies in clinical practice, thus ensuring more accurate and meaningful assessments.

With respect to the perceived impact of university hospitals on the educational process, an overwhelming majority of the students (90.6%) believed that university hospitals positively contributed to their learning. However, it is important to recognize the concerns raised by a minority (9.4%), indicating the need for further exploration into the potential challenges or drawbacks associated with university hospital settings. This feedback suggests that the integration of university hospitals into academic curricula is generally well received, but additional research could help identify areas for improvement.

There was also a noticeable division in opinion about the quality of hospitals and healthcare centers used as training sites. While 57.1% of the students felt that these facilities were adequate for covering all aspects of the course, 42.9% expressed doubts about their suitability. This divergence calls for further investigations to assess the suitability of training centers and to potentially expand the range of facilities available for clinical education. Previous literature has noted that hospital centered rotations may limit students' exposure to the full scope of primary care practice. For example, many clerkship programs have had to specifically arrange community and rural placements to ensure adequate clinical exposure.^{12,13}

The logistic regression analysis revealed several independent predictors of overall course satisfaction. The finding that Students who completed the family medicine course in their sixth year reported notably higher satisfaction levels (AOR=3.15) may be due to their additional clinical experience and better appreciation of family medicine's role in healthcare. This suggests that students may benefit from the course more when they have a stronger clinical knowledge.

Furthermore, students' perceptions of a comprehensive lecture content coverage (AOR=2.87), adequate course duration (AOR=3.38), and sufficient number of instructors (AOR=2.92) all were identified as significant predictors of satisfaction. The importance of adequate resources has been highlighted in previous studies on faculty development in family medicine education,⁴ which emphasizes the need for faculty recruitment and maintenance of qualified teaching staff.

Despite the generally positive perceptions, only 44.2% of our students claimed that they would choose FM as a future career. This percentage is consistent with international studies showing variable rates of family medicine career choice

among medical students. In Canada, for example, fewer than one-third of medical students planned to enter FM residency.¹⁴ In contrast, some earlier studies from Saudi Arabia did observe significant increases in FM career interest following clerkships.¹⁵ The difference may be due to differences in curriculum design and clerkship quality, or evolving career considerations over time.

The logistic regression analysis for residency intention revealed that perception of a competitive salary (AOR=2.05) and belief in patient reliance on family physicians (AOR=3.38) were significant predictors. These findings align with the Pan American Journal systematic review by Puertas et al, where they found that low income and low prestige were barriers to choosing primary care as a specialty across multiple countries.¹⁶ This suggests that students' career decisions are influenced not only by their educational experiences, but also by how they perceive the specialty's salary and its importance to patient care.

There are several limitations to this study. First, the findings may not be generalizable beyond the specific context of Yarmouk University, as the study captures only the views of students enrolled in the family medicine rotation at this particular institution. The applicability of these results to other educational settings or student populations is therefore limited.

Second, the questionnaire was not pilot tested before distribution, which may have limited the ability to assess the clarity and internal consistency of certain items. Also, formal construct validation of the adapted questionnaire was not performed in this study population, which may limit confidence that the instrument fully captured the intended domains. In addition, because the data were based on self-reported responses, there remains the possibility of response bias. Students may not provide completely honest feedback due to various influencing factors, such as personal relationships with educators or their perceived performance in the course.

A third limitation concerns the design of the questionnaire itself. The survey consisted primarily of closed-ended dichotomous (yes/no) questions. While this format is practical for quantitative analysis, it may have restricted the depth of students' responses that could have been obtained through Likert-scale items or open-ended questions. Additionally, demographic characteristics such as age and gender were not included in the questionnaire. The absence of these variables meant it was not possible to examine whether students' views on the rotation differed based on these characteristics. Furthermore, the study captured students' perceptions only after completion of the rotation and did not assess longer-term changes in attitudes over time.

Finally, the comparison between our study and the Saudi Arabian study may be influenced by differences in educational systems, cultural contexts, and student preferences, which could affect the validity of direct comparisons. Furthermore, the interpretation of the findings may be shaped by the perspectives of the researchers, potentially leading to subjective conclusions or overlooking other factors.

To address these limitations, future research could incorporate qualitative methods to complement the quantitative data, ensuring a more comprehensive understanding of student experiences. Additionally, including a more diverse sample population could improve the generalizability of the findings. Providing greater contextual information and developing clear plans for follow-up research or actions on the basis of identified issues will further enhance the study's contribution to improving family medicine education. Furthermore, future research would benefit from utilizing a diverse range of question formats, including Likert-scale items and open-ended questions, alongside closed-ended responses. This mixed-format approach would provide deeper insight into students' perceptions and experiences. Additionally, including demographic variables such as age and gender in future surveys would enable researchers to explore whether satisfaction levels and career intentions differ across different student subgroups, potentially revealing important patterns that the current study was unable to identify.

Conclusions

Our study revealed that family medicine clerkship at Yarmouk University was generally viewed positively by students and helped improve their understanding of the specialty. Students' satisfaction with the FM course was primarily influenced by the perceived adequacy of teaching staff and the comprehensiveness of the curriculum rather than clinical exposure alone, while residency intentions were shaped by salary expectations and beliefs about the specialty's clinical importance.

These results suggest that medical education must move beyond simply improving content delivery. A critical change is the need to reduce large-group teaching to smaller, more interactive groups, as 81.7% of students felt that large groups negatively affected their learning experience. Furthermore, the findings imply that a four-week rotation may be insufficient to meet the course's educational objectives, therefore, extending it could align the program with international recommendations of at least eight weeks for final-year clerkships.¹¹ The timing of the rotation within the curriculum also matters, as those who undertook the course in their 6th-year showed significantly higher satisfaction (AOR 3.15), suggesting that the course is most effective when students have already completed foundational clinical rotations in internal medicine and pediatrics. Interestingly, overall course satisfaction was not a significant predictor of residency intention, suggesting that career choices are driven more by perceptions of the specialty itself rather than the educational experience.

These findings provide practical guidance for curriculum development at Yarmouk University and serve as a valuable reference for medical schools in Jordan. Continuous evaluation and improvement of family medicine education are essential to ensure that training programs remain aligned with evolving academic requirements, clinical practice needs, and student expectations.

Abbreviation

OSCE, Objective Structured Clinical Examination.

Data Sharing Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Ethics Approval and Informed Consent

Ethical approval was obtained from the Institutional Review Board (IRB) of Yarmouk University on the 30th of October 2023 with the reference number (IRB/2023/525). Informed consent was obtained from all participants prior to their participation in the study.

Consent for Publication

All authors consent to publication; however, this study did not include identifiable images, videos, recordings. All participants consented to the publication of their anonymous responses.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

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References

1. Al Shehri AM, Al Faris E. Learning objectives of medical students: what is the message. *Saudi Med J.* 1998;19(1):70–72.
2. El-Hazmi MAF, Haque SMS. Curriculum evaluation: status and options. *Med Educ.* 1985;19(1):48–53. doi:10.1111/j.1365-2923.1985.tb01138.x

3. Ramanayake RPJC, De Silva AHW, Perera D, Sumanasekara RDN, Gunasekara R, Chandrasiri P. Evaluation of teaching and learning in family medicine by students: a Sri Lankan experience. *J Family Med Prim Care*. 2015;4(1):3–8. doi:10.4103/2249-4863.152236
4. Sorinola OO, Thistlethwaite J. A systematic review of faculty development activities in family medicine. *Med Teach*. 2013;35(7):e1309–e1318. doi:10.3109/0142159X.2013.770132
5. Al-Faris EA. Students evaluation of a traditional and an innovative family medicine course in Saudi Arabia. *Educ Health*. 2000;13(2):231–235. doi:10.1080/13576280050074507
6. Al-Faris E, Kalantan K, Al-Rowais N, et al. Career choices among Saudi medical students. *Acad Med*. 1997;72(1):65–67.
7. Kang H, Prunuske J, Wendling AL, Edwards-Johnson J, Phillips JP. FMAQ-S: development of a short form of the Family Medicine Attitudes Questionnaire. *PRiMER*. 2021;5:21. doi:10.22454/PRiMER.2021.767096
8. Johnston MP. Assessment for excellence: the philosophy and practice of assessment and evaluation in higher education. 2nd ed. By Alexander W Astin and Anthony Lising Antonio (review). *J Coll Stud Dev*. 2014;55(4):427–429. doi:10.1353/csd.2014.0033
9. Al-Shehri MY, Al-Ghamdi AS. Is there anything wrong with undergraduate medical education in Saudi Arabia. *Saudi Med J*. 1999;20:215–218.
10. Mackey C, Jandu S, Fidrocki J, Raduzycki T, Carey J. Exploring optimal group sizes for learning in medical simulation: a systematic review. *J Med Educ Curric Dev*. 2025;12:23821205251327287. doi:10.1177/23821205251327287
11. Hashim MJ. Teaching family medicine and general practice. *Korean J Fam Med*. 2022;43(2):93–100. doi:10.4082/kjfm.20.0223
12. Haggerty T, Hanks H, Xiang J, Unger K, Dino G. A comparison of rural and academic training environments for third-year medical students on a family medicine rotation. *Fam Med*. 2019;51(5):430–433. doi:10.22454/FamMed.2019.893411
13. Codsí MP, Rodrigue R, Authier M, Diallo FB. Family medicine rotations and medical students' intention to pursue family medicine: descriptive study. *Can Fam Physician*. 2019;65(7):e316–e320.
14. Vanasse A, Orzanco MG, Courteau J, Scott S. Attractiveness of family medicine for medical students: influence of research and debt. *Can Fam Physician*. 2011;57(6):e216–e227.
15. Al-Faris EA, Al-Rukban MO. Community-based family medicine course: does it have impact on students' learning achievements, attitude and career choice? *J Fam Community Med*. 2004;11(3):121–126. doi:10.4103/2230-8229.97706
16. Puertas EB, Arósqüpa C, Gutiérrez D. Factors that influence a career choice in primary care among medical students from high-, middle-, and low-income countries: a systematic review. *Rev Panam Salud Publica*. 2013;34(5):351–358.

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