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Specialty Choice Attitudes Among Medical Interns: Evidence from Hormozgan University of Medical Sciences

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Abstract

Background: Choosing a medical specialty is a critical career decision that affects both physicians' future professional lives and the composition of the healthcare workforce. Specialty preferences are shaped by multiple personal, educational, and socioeconomic factors; however, evidence from senior medical students in southern Iran remains limited. This study aimed to assess willingness to pursue specialty training among medical interns at Hormozgan University of Medical Sciences, identify their preferred specialties, and examine factors associated with their decisions.

Methods: This descriptive-analytical cross-sectional study was conducted in 2023 among medical interns at Hormozgan University of Medical Sciences in Bandar Abbas, Iran. Using a convenience census approach, all eligible interns were invited to participate, and 83 students completed an online questionnaire. The instrument collected demographic, academic, and occupational data, as well as reasons for willingness or unwillingness to pursue specialty training and specialty preferences. Content and face validity were assessed by faculty members and students, and internal-consistency reliability in the present study was acceptable (Cronbach's $\alpha = 0.82$). Data were analyzed using descriptive statistics and logistic regression in SPSS version 27.

Results: Of the 83 participants, 50 (60.2%) reported willingness to pursue specialty training, whereas 33 (39.8%) did not. Among students willing to continue, the most frequently cited reasons were achieving a better economic position, broader job opportunities, and higher social status. Among those unwilling to continue, the most common reasons were fatigue from prolonged studying, financial problems, and the desire to start working after graduation. Radiology was the most common first-choice specialty, followed by otorhinolaryngology, dermatology, and cardiology. In regression analyses, no demographic or academic variable remained independently associated with willingness to pursue specialty training in the final multivariable model.

Conclusions: A majority of medical interns were interested in pursuing specialty training, with preferences concentrated in a limited number of specialties perceived as offering favorable financial prospects, prestige, and lifestyle. Economic concerns and educational fatigue were the dominant factors influencing willingness and unwillingness to continue specialty education. These findings highlight the need for structured career counseling, broader exposure to different specialties, and policy measures to address financial and structural barriers to residency training.

Keywords: Medical Specialty Choice; Medical Interns; Residency Training; Medical Education; Hormozgan University of Medical Sciences

1 Introduction

Choosing a medical specialty is one of the most important career decisions in medical training. This decision affects not only the future professional life of individual physicians but also the composition and distribution of the healthcare workforce. Specialty preferences of medical students ultimately shape the future availability of specialists across disciplines, and imbalances in these preferences may contribute to shortages or oversupply in specific fields. For this reason, understanding how and why students develop interest in particular specialties is important for both educational planning and health workforce policy [Sahebari et al. \(2014\)](#); [Chang et al. \(2006\)](#).

Specialty choice is a complex and multifactorial process. Previous studies have shown that students' decisions are influenced by a combination of personal interest, perceived aptitude, expected income, social prestige, lifestyle considerations, working conditions, duration of training, and exposure to positive or negative role models [Petrides and McManus \(2004\)](#); [Dikici et al. \(2008\)](#); [Weissman et al. \(2012\)](#); [Saigal et al. \(2007\)](#); [Cleland et al. \(2012\)](#); [Vahid Dastjerdi et al. \(2012\)](#). Clinical experiences appear to be particularly important, as students often modify their early preferences after entering the clinical environment and becoming familiar with the realities of different specialties [Schoon and Kötter \(2024\)](#); [Querido et al. \(2020\)](#). The internship period may therefore represent a particularly informative stage for assessing specialty intentions because students have already experienced substantial clinical exposure and are approaching actual career decision-making.

Over the past decades, patterns of specialty preference have changed in many settings. Earlier studies often reported strong interest in major clinical fields such

as surgery and internal medicine [Kumar et al. \(2014\)](#), whereas more recent evidence suggests increasing attraction toward specialties perceived to offer more controllable lifestyles, more favorable working hours, and a better balance between professional and personal life [Lambert et al. \(2006\)](#). At the same time, financial expectations and future job opportunities remain important determinants of career choice [Sahebari et al. \(2014\)](#). These trends have important implications for healthcare systems, especially where less preferred specialties may face workforce shortages [Leutritz et al. \(2024\)](#).

In Iran, specialty selection is also shaped by the structure of medical education and the competitive national residency entrance process [Simforoosh et al. \(2014\)](#). Although all medical graduates are potentially eligible to compete for residency training, access to preferred specialties depends heavily on examination performance and available training positions [Shakurnia et al. \(2016b\)](#); [Zarghami et al. \(2003\)](#). As a result, some graduates may ultimately enter specialties that do not fully match their initial interests. Moreover, because exposure to all specialties during undergraduate training is not always uniform, students may make decisions based on incomplete experience or limited information. These issues make it especially important to examine students' preferences and the factors influencing them in the local educational context.

Despite the practical importance of this topic, relatively few studies in Iran have focused specifically on senior medical students' willingness to pursue specialty training and their specialty preferences. Available evidence has often been based on residents or graduates rather than students at the end of undergraduate medical education, although a few valuable recent studies have addressed this topic [Salehian et al. \(2022\)](#); [Sarikhani et al. \(2022a,b\)](#); [Mansouri et al. \(2023\)](#). In addition, local data from southern Iran and Bandar Abbas are limited. Given the potential influence of regional, cultural, educational, and labor-market factors on specialty choice, locally generated evidence is needed to better inform academic counseling and workforce planning.

Therefore, the present study was conducted to assess willingness to pursue specialty training among medical interns at Hormozgan University of Medical Sciences in Bandar Abbas, to identify their preferred specialties, and to examine the factors associated with their interest or lack of interest in continuing specialty education.

2 Methods & materials

2.1 Study design and setting

This descriptive-analytical cross-sectional study was conducted in 2023 among medical interns enrolled at Hormozgan University of Medical Sciences, Bandar Abbas, Iran. The study aimed to assess students' willingness or unwillingness to pursue specialty training, their specialty preferences, and the factors influencing these decisions.

2.2 Data

The study population consisted of all medical students in the internship stage who were studying at Hormozgan University of Medical Sciences in 2023. Sampling was performed using a convenience census approach. After obtaining the necessary administrative approvals and ethics approval, all eligible interns were invited to participate

139 in the study. We gathered data during the period of September to November 2023.
140 Based on the Morgan table for sample size determination in descriptive studies, and
141 considering that the total number of medical interns was 129, the minimum required
142 sample size was estimated at 75 students. To compensate for potential non-response,
143 10% was added, and the target sample size was set at 83 participants. Ultimately, 83
144 students completed the questionnaire and were included in the analysis. The inclusion
145 criteria were: being a medical student at Hormozgan University of Medical Sciences
146 in the internship stage in 2023 and providing informed consent to participate in the
147 study. The exclusion criterion was refusal to participate in the study.

148 Data were collected using an online questionnaire administered through Google
149 Forms. The questionnaire used in this study was not developed specifically for the
150 present research. It was adopted from the questionnaire previously developed and
151 published by [Navabi et al. \(2012\)](#). for assessing factors affecting students' willingness
152 to continue education, for which prior psychometric evaluation had been reported.
153 In the original study, internal consistency reliability was reported with a Cronbach's
154 alpha of 0.87. The questionnaire used in the present study consisted of several sections,
155 including: demographic and personal information, items related to reasons for interest
156 in continuing specialty education (8 items), items related to reasons for unwillingness
157 to continue specialty education (9 items) and items related to reasons for choosing
158 a particular specialty (5 items). The questionnaire also included items on specialty
159 preferences and background characteristics such as age, sex, marital status, admission
160 type/quota, national entrance examination rank, internship duration, employment
161 status, personal income, interest in medicine, and grade point average. The motivation-
162 related items were designed on a three-point scale consisting of important, relatively
163 important, and not important. The questionnaire link was electronically distributed
164 to students individually through virtual communication channels.

165 To assess content validity, the questionnaire was reviewed by university specialists
166 and faculty members, who evaluated the relevance of the items to the study objectives
167 and the adequacy of coverage of the main dimensions of the topic. Face validity was
168 assessed by providing the questionnaire to 10 medical students, who reviewed the
169 items in terms of clarity, simplicity, and comprehensibility. Their feedback was used
170 to make final revisions to the questionnaire. To evaluate reliability in the present
171 study, the questionnaire was completed by 10 students, and internal consistency was
172 assessed using Cronbach's alpha. The resulting Cronbach's alpha coefficient was 0.82,
173 indicating acceptable reliability of the instrument for measuring the study variables.

174 After approval of the study and receipt of the ethics code, the online questionnaire
175 was prepared and distributed to eligible medical interns. Participation was voluntary.
176 Before completing the questionnaire, students were informed about the purpose of the
177 study, and only those who agreed to participate completed the form. Responses were
178 collected electronically and then entered into SPSS version 27 for statistical analysis.
179 The collected dataset is also accessible on the Harvard Dataverse platform [Kashefi Sis
180 and Shendabadi \(2026\)](#).

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Table 1: Measurement characteristics of study variables

Scale	Measurement unit / method	Variable type			Role of variable			Variable title	No.
		Qualitative	Discrete	Continuous	Control	Independent	Dependent		
Ratio	Year			✓			✓	Age	1
Nominal	Female / Male	✓					✓	Gender	2
Nominal	Single / Married	✓					✓	Marital status	3
Nominal	Unemployed / Employed	✓					✓	Student employment status	4
Nominal	Regional quota / Other	✓					✓	Type of admission quota	5
Ratio	Numeric categorization			✓			✓	University entrance exam rank	6
Ratio	Number of full months elapsed since the first day of internship		✓				✓	Months elapsed since the start of internship	7
Ratio	Mean score obtained for each questionnaire item			✓		✓		Score from the questionnaire on interest or lack of interest in continuing education	8

The primary outcome variable was willingness to pursue specialty training, which was recorded as a binary variable (yes/no). Other variables included:

- demographic variables: age, sex, and marital status;
- academic variables: national entrance examination rank, internship duration, and GPA;
- admission-related variables: admission type/quota;
- occupational/economic variables: part-time job status;
- motivational variables: reasons for willingness or unwillingness to continue specialty training; and
- preferred specialty choices, recorded as first, second, and third priorities.

2.3 Statistical analysis

Data were analyzed using SPSS software version 27 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarize the data. Quantitative variables were reported as mean $\pm$ standard deviation and range, while qualitative variables were presented as frequency and percentage.

To evaluate factors associated with willingness to pursue specialty training, logistic regression analysis was performed. First, univariable logistic regression models were fitted. Then, adjusted models controlling for age and sex were examined. Finally, a multiple logistic regression model was constructed including variables of interest and/or variables that showed significance in earlier analyses. Odds ratios (ORs) with 95% confidence intervals (CIs) were reported. A two-sided P-value of less than 0.05 was considered statistically significant.

2.4 Ethical considerations

All ethical principles of research involving human participants were observed. The study was approved by the Ethics Committee of Hormozgan University of Medical Sciences under ethics code IR.HUMS.REC.1402.130 on July 8, 2023. Participation was voluntary, and informed consent was obtained from all participants before data collection. Confidentiality of participants' information was maintained throughout the study.

3 Results

3.1 Participant characteristics

A total of 83 internship-stage medical students at Hormozgan University of Medical Sciences participated in this descriptive-analytical cross-sectional study in 2023 and completed the study questionnaire. The mean age of the participants was 26.69 ± 1.99 years (range: 23–40 years). Of the total sample, 39 students (47.0%) were female and 44 (53.0%) were male. Most participants were single ($n = 65$, 78.3%), including 27 women and 38 men. In addition, 11 students reported having a part-time job. A summary of the general demographic and academic characteristics of the participants is presented in Table 2.

Table 2: Demographic and Educational Findings of the Study

Variable	Number	Percentage (%)
Gender		
Male	44	53.0
Female	39	47.0
Marital Status		
Married	18	21.7
Single	65	78.3
Part-time Job		
No	72	86.7
Yes	11	13.3
National University Entrance Exam Rank		
Below 1000	4	4.8
1000 to 2000	17	20.5
2000 to 4000	36	43.4
Above 4000	26	31.3
Admission Type		
Type 1	6	7.2
Type 2	35	42.2
Type 3	22	26.5
Other	1	1.2
Deprived areas quota	11	13.3
Veterans/Sacrificers quota	8	9.6
Months Elapsed Since Internship Start		
1	1	1.2
2	1	1.2
3	5	6.0
6	2	2.4
7	2	2.4
8	1	1.2
9	6	7.2
10	2	2.4
12	12	14.5
13	13	15.7
14	11	13.3
15	13	15.7
16	10	12.0
17	1	1.2
18	3	3.6
Medical School GPA		
14–15	6	7.2
15–16	31	37.3
16–17	33	39.8
17–18	8	9.6
18–19	4	4.8
19–20	1	1.2
Total	83	100.0

National entrance examination rank was categorized into four levels. The most frequent category was a rank between 2,000 and 4,000 ($n = 36$), whereas the least

317 frequent category was a rank below 1,000 ($n = 4$). Regarding admission quota type,
318 the Region 2 quota was the most common ($n = 35$), whereas the “other” admission
319 type had the lowest frequency ($n = 1$). The number of months completed in internship
320 ranged from 1 to 18 months, with the highest frequencies observed at months 13 and
321 15 ($n = 13$ each), and the lowest frequencies observed at months 1, 2, 8, and 17 ($n = 1$
322 each). For grade point average (GPA) during medical training, the 16–17 category
323 was the most common ($n = 33$), whereas the 19–20 category was the least frequent
324 ($n = 1$).

325 Among the 83 participating medical interns, 50 students (60.2%) reported willing-
326 ness to continue their education in a specialty-training program, whereas 33 students
327 (39.8%) stated that they were not willing to pursue specialty education.

328

329 **3.2 Reasons for willingness or unwillingness to pursue** 330 **specialty training** 331

332 The main motivations reported by students who expressed willingness to enter spe-
333 cialty training are summarized in Table 3. The most frequently cited reason was
334 achieving a better economic position ($n = 41$), making it the leading motivation for
335 pursuing specialty education. This was followed by access to better and broader job
336 opportunities ($n = 35$) and obtaining a higher social status ($n = 34$). These findings
337 indicate that economic and social advancement were the dominant drivers of interest
338 in specialty training.

339 Other reasons were reported less frequently. Increasing knowledge was mentioned
340 by 19 students, and family recommendation was reported by 15 students. Better ser-
341 vice to society and improved communication with people were selected by 13 and 11
342 students, respectively. The least frequently reported motivation was the desire to be
343 employed as an academic faculty member at a university, which was mentioned by
344 only 4 students. Overall, the pattern suggests that personal and material incentives
345 were more prominent than academic or altruistic considerations.

346 Among the 33 students who were not willing to continue specialty training, the
347 reasons for this decision are presented in Table 3. The most common reason was
348 fatigue from prolonged studying, reported by 22 students, indicating the importance
349 of educational burnout in shaping students’ decisions. Financial problems were the
350 second most frequently reported factor ($n = 21$), underscoring the role of economic
351 constraints in discouraging continued education.

352 The third most common reason was the desire to start working after graduation
353 ($n = 18$), suggesting that a substantial proportion of students preferred entering the
354 workforce immediately after completion of general medical training. This was followed
355 by the long duration of specialty-training programs ($n = 16$) and plans to immigrate
356 ($n = 12$). Fewer students cited the difficulty of specialty courses ($n = 9$) and problems
357 succeeding in examinations ($n = 6$). The least frequently reported reason was the
358 unavailability of the preferred specialty in the place of residence ($n = 3$). In general,
359 individual and psychological factors, particularly study fatigue, along with financial
360 concerns appeared to play a greater role than structural or geographic factors in
361 explaining unwillingness to pursue specialty education.

362

Students were also asked which factors would influence their decision to pursue specialty education under more favorable circumstances. For students who were currently unwilling to continue specialty training, this meant imagining that the barrier underlying their unwillingness had been removed and then reporting which factors would influence the specialty they would choose. For those who had already expressed willingness to continue, it referred to the factors that, if circumstances were more favorable, could shape their choice of a different specialty field. As shown in Table 3, the most frequently cited factor was economic benefit, reported by 56 students (67.5%). This finding highlights the central role of financial return and professional prospects in students' decision-making.

The second most common factor was pure interest in the scientific content of the specialty, mentioned by 43 students (51.8%). Social position and prestige ranked third, reported by 31 students (37.3%). A shorter duration of training was cited by 22 students (26.5%), suggesting that the length of specialty education remains an important deterrent. Better service to people was reported by 13 students (15.7%), and family advice was the least cited factor, mentioned by 8 students (9.6%). Taken together, these findings suggest that, under more favorable circumstances, students' decisions to pursue specialty training would still be driven primarily by economic and scientific motivations rather than family influence or altruistic considerations.

3.3 Specialty preferences

The distribution of students' first, second, and third specialty choices is shown in Figure 1. Analysis of first-priority choices demonstrated that radiology was the most preferred specialty, with 24 students selecting it as their first choice. Otorhinolaryngology (ENT) ranked second with 18 first-priority selections, followed by dermatology with 9 selections. Other specialties receiving first-priority selections included cardiology ($n = 7$), psychiatry ($n = 4$), and ophthalmology ($n = 3$). In contrast, several specialties, including emergency medicine, neurology, anesthesiology, internal medicine, social medicine, and sports medicine, received no first-priority selections.

For second-priority choices, cardiology ranked first with 14 selections, indicating that although it was not among the most frequently chosen first priorities, it remained an important option for many students. Dermatology was the second most common second-priority choice ($n = 10$), followed by radiology and ENT ($n = 8$ each). Some specialties, including obstetrics and gynecology, urology, anesthesiology, infectious diseases, social medicine, and sports medicine, received no second-priority selections. The pattern changed somewhat for third-priority preferences. Ophthalmology had the highest number of third-priority selections ($n = 9$), followed by dermatology ($n = 8$). Cardiology, psychiatry, and obstetrics and gynecology each received 7 third-priority selections. Meanwhile, radiology, radiation oncology, neurosurgery, forensic medicine, head and neck surgery, and sports medicine received no third-priority selections. Overall, the data indicate a strong preference for specialties such as radiology, ENT, dermatology, and cardiology. These specialties may be perceived by students as offering more favorable career prospects, social prestige, or work-life balance. In contrast, less preferred specialties either appeared only in lower-priority rankings or were not selected at all.

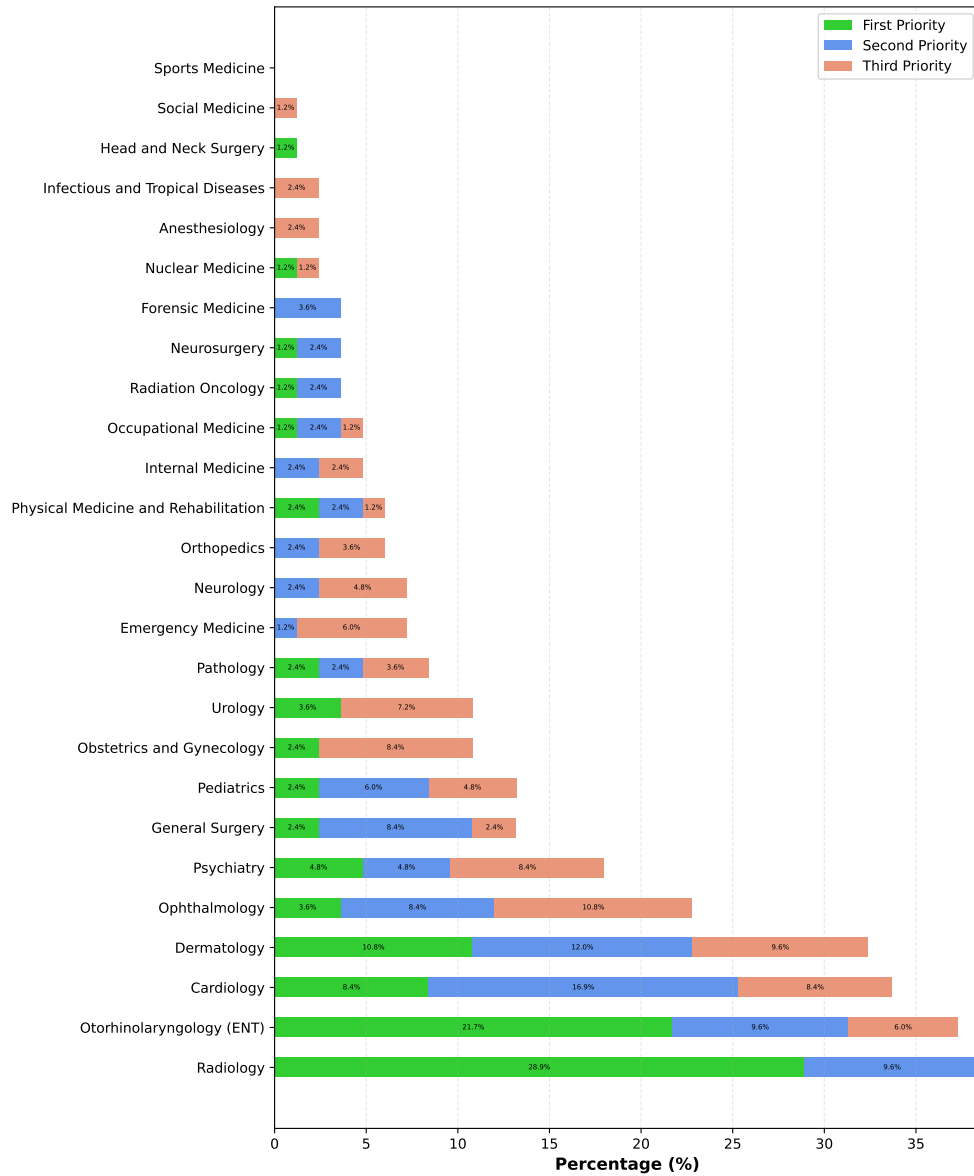


Fig. 1: Priorities of Hormozgan University of Medical Sciences interns for medical specialty selection. This chart illustrates the distribution of first, second, and third preferences across 26 specialties. Data are presented as percentages ($N = 83$ total respondents). Radiology shows the highest proportion of first-priority selections (28.9%), followed by Otorhinolaryngology (21.7%) and Dermatology (10.8%).

Table 3: Interns' Perspectives on Continuing Education

Reasons	Imp.		Mod. Imp.		Unimp.	
	N	%	N	%	N	%
Reasons for Interest in Continuing Education						
Achieving better economic status	41	49.4	8	9.6	1	1.2
Access to better and more jobs	35	42.2	13	15.7	2	2.4
Achieving better social status	34	41.0	15	18.1	1	1.2
Increasing knowledge	19	22.9	23	27.7	8	9.6
Family advice	15	18.1	18	21.7	17	20.5
Better service to society	13	15.7	25	30.1	12	14.5
Better communication with people	11	13.3	23	27.7	16	19.3
Desire for academic employment as a faculty member	4	4.8	20	24.1	26	31.3
Reasons for Lack of Interest in Continuing Education						
Burnout from studying	22	26.5	3	3.6	8	9.6
Financial problems	21	25.3	9	10.8	3	3.6
Desire to start working as a general physician	18	21.7	10	12.0	5	6.0
Long duration of specialty programs	16	19.3	14	16.9	3	3.6
Immigration	12	14.5	6	7.2	15	18.1
Difficulties of specialty courses	9	10.8	15	18.1	9	10.8
Difficulties in passing exams	6	7.2	12	14.5	15	18.1
Lack of preferred specialty in place of residence	3	3.6	12	14.5	18	21.7
Reasons for Continuing Education if Conditions Are Favorable						
Economic aspects	56	67.5	24	28.9	3	3.6
Pure interest in the field of study	43	51.8	33	39.8	7	8.4
Social status	31	37.3	35	42.2	17	20.5
Shorter duration of training	22	26.5	25	30.1	36	43.4
Better service to people	13	15.7	36	43.4	34	41.0
Family advice	8	9.6	21	25.3	54	65.1
<i>Note: Among 83 interns, 50 wanted to continue specialty education and 33 did not.</i>						
<i>All percentages use N = 83 as denominator.</i>						
<i>Imp. = Important; Mod. Imp. = Moderately Important; Unimp. = Unimportant</i>						

The results of univariable, age- and sex-adjusted, and multiple logistic regression analyses examining factors associated with willingness to choose a specialty are presented in Table 4. In the final multiple logistic regression model, none of the studied variables remained statistically significant. Although, in the adjusted model controlling for age and sex, total GPA in the 16–17 range ($P = 0.049$) and 17–18 range ($P = 0.028$) reached statistical significance, these associations were not confirmed in the final multivariable model. In the final model, the corresponding P -values increased to 0.439 and 0.130, respectively, and the 95% confidence intervals for the odds ratios included 1.

Other variables, including age, sex, marital status, having a part-time job, admission quota category, national entrance examination rank, and other GPA categories (14–15, 15–16, 18–19, and 19–20), were not significantly associated with willingness to pursue specialty training in any of the regression models (all $P > 0.05$). Specifically,

age (OR = 0.90, $P = 0.721$) and male sex (OR = 1.80, $P = 0.221$) showed no significant relationship with willingness to pursue specialty training. Similarly, none of the admission quota categories (Region 1, Region 2, Region 3, deprived area quota, veteran quota, or other) had a statistically significant effect on willingness to choose a specialty. Overall, the regression analysis did not identify any independent demographic or academic predictors of willingness to pursue specialty training in this sample.

4 Discussion

This study examined specialty preferences, willingness to pursue residency training, and the main motivating and discouraging factors among interns at Hormozgan University of Medical Sciences. Overall, the findings suggest that specialty choice is a multifactorial decision shaped primarily by economic considerations, perceived job opportunities, social prestige, and lifestyle-related expectations, rather than by demographic or academic characteristics alone. These findings are important because the specialty preferences of current medical students contribute directly to the future composition of the physician workforce, and imbalances in specialty distribution may ultimately affect health-system performance and access to care [Sahebari et al. \(2014\)](#); [Khader et al. \(2008\)](#). Specialty choice has long been recognized as a key stage in medical career development. A central finding of the present study was that most students expressed interest in pursuing specialty training. This is generally consistent with reports from many settings indicating that interest in specialization has increased over time [Weissman et al. \(2012\)](#).

In the present study, students' preferences were concentrated in specialties such as radiology, otorhinolaryngology, dermatology, and cardiology, whereas several other specialties attracted little or no interest. This pattern is noteworthy because it appears to differ from the traditional dominance of major or highly demanding specialties reported in older literature [Kumar et al. \(2014\)](#); [Lambert et al. \(2006\)](#). The current findings instead suggest a shift toward specialties perceived as offering more favorable working conditions, more controllable lifestyles, and attractive financial prospects [Simforoosh et al. \(2014\)](#). This pattern is in line with more recent international evidence showing that younger physicians increasingly value work-life balance alongside income and prestige [Harris et al. \(2005\)](#). Within this framework, specialties such as dermatology, ophthalmology, and radiology may be especially attractive because they are often associated with more predictable schedules, less physically demanding workloads, and comparatively favorable remuneration. This shift away from some major specialties may reflect several realities experienced by students during clinical training. Prolonged exposure to demanding hospital environments, heavy workloads, high emotional burden, difficult interpersonal climates in some departments, and concerns about uncertain or stressful future career conditions may all reduce the attractiveness of more intensive specialties [Cleland et al. \(2012\)](#). In addition, limited or uneven exposure to certain specialties during clinical rotations may influence students' awareness of those fields and reduce the likelihood that they will consider them seriously [Ossai et al. \(2016\)](#). Thus, specialty preference may be shaped not only by the inherent

nature of a field but also by the quality and extent of students' contact with it during undergraduate training.

Economic considerations emerged as one of the strongest themes in this study, both among students interested in specialty training and among those who were hesitant or unwilling to continue. This finding is highly meaningful in the context of medical education, in which students spend many years in training before reaching a stable income. The long educational pathway in medicine can create pressure to choose specialties that promise faster financial return, greater earning potential, or more secure employment opportunities. Conversely, when the perceived financial burden of continued training is high, motivation to pursue residency may decline. The prominence of financial factors in the present study is therefore consistent with previous research showing that income expectations, living conditions during residency, and anticipated future earnings are major determinants of specialty preference [Sahebari et al. \(2014\)](#); [Dikici et al. \(2008\)](#); [Eltorai et al. \(2018\)](#); [DeZee et al. \(2011\)](#); [Lefebvre et al. \(2020\)](#); [Lima de Souza et al. \(2015\)](#); [Enoch et al. \(2013\)](#). The importance of economic motives in this study should not be interpreted narrowly as simple materialism. Rather, it may reflect a broader concern with long-term professional stability, independence, and quality of life. Students often evaluate specialties not only in terms of scientific interest but also in relation to the years required for training, the financial sacrifices expected during residency, and the sustainability of the eventual career path. This interpretation is supported by another finding of the present study: under more favorable conditions, economic considerations were the most frequently reported motivation for pursuing specialty education among both students who were willing and those who were unwilling to continue specialty training.

Another important finding was that fatigue from studying was one of the most common reasons for not pursuing specialty training. This result highlights the role of academic burnout in medical career decision-making. The prolonged duration of medical education, repeated high-stakes evaluations, and cumulative psychological and physical demands of the clinical years may contribute to exhaustion by the end of internship. For some students, the prospect of entering another long and demanding period of residency training may therefore be discouraging, even if they remain interested in medicine as a profession. Similarly, the preference of some students to enter the job market immediately after graduation may represent both economic necessity and a desire to regain control over time, income, and personal life after years of intensive education. The findings also support the growing importance of lifestyle considerations in specialty choice. Although the questionnaire did not directly measure "controllable lifestyle" as a separate variable, the pattern of preferred specialties and the reasons reported by students strongly suggest that this concept is highly relevant. Recent studies in different countries have likewise shown that younger generations of medical trainees increasingly prioritize manageable work hours, reduced on-call burden, and the possibility of balancing professional and personal responsibilities [Enoch et al. \(2013\)](#); [Daily et al. \(2025\)](#). In addition, some research has reported increasing rates of regret among medical residents [Dyrbye et al. \(2018, 2013\)](#); [Shanafelt et al. \(2009\)](#). These trends may help explain declining interest in more demanding or stressful specialties and growing interest in fields traditionally associated with more regular schedules.

Table 4: Factors Influencing the Tendency to Choose a Specialty

Variable	Simple Logistic Regression (Univariate)		Logistic Regression Adjusted for Age and Gender		Multiple Logistic Regression (Final Model)	
	P value	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)
Age (per 1 year)	0.792	1.0 (0.8–1.3)	–	–	0.721	0.9 (0.7–1.2)
Gender (Male)	0.262	1.7 (0.7–4.0)	–	–	0.221	1.8 (0.7–4.6)
Single	0.246	0.5 (0.2–1.5)	0.412	0.6 (0.3–1.2)	–	–
Part-time job (Yes)	0.134	0.3 (0.1–1.4)	0.175	0.4 (0.1–2.1)	–	–
Admission quota (Region 1)	–	1 (Ref.)	–	1 (Ref.)	–	–
Admission quota (Region 2)	0.758	1.3 (0.2–8.1)	0.999	0.1 (0.1–1.4)	–	–
Admission quota (Region 3)	0.365	2.4 (0.3–15.6)	0.412	2.2 (0.8–7.9)	–	–
Admission quota (Other region)	0.812	0.1 (0.1–1.0)	0.999	0.1 (0.1–1.1)	–	–
Admission quota (Deprived areas)	0.901	1.1 (0.2–9.7)	0.177	4.2 (0.6–25.4)	–	–
Admission quota (Veterans/Sacrificers)	0.363	0.3 (0.1–4.4)	0.808	0.6 (0.1–2.6)	–	–
National rank (Below 1000)	–	1 (Ref.)	–	1 (Ref.)	–	–
National rank (1000 to 2000)	0.749	0.7 (0.1–6.2)	0.646	0.4 (0.1–13.2)	–	–
National rank (2000 to 4000)	0.916	0.9 (0.1–7.0)	0.486	0.3 (0.1–8.4)	–	–
National rank (Above 4000)	0.361	0.4 (0.1–3.1)	0.432	0.2 (0.1–2.6)	–	–
Overall GPA (14–15)	–	1 (Ref.)	–	1 (Ref.)	–	–
Overall GPA (15–16)	0.942	0.9 (0.2–5.4)	0.182	0.1 (0.1–2.7)	–	–
Overall GPA (16–17)	0.439	0.5 (0.1–2.2)	0.049*	0.1 (0.1–1.0)	0.413	0.4 (0.2–1.8)
Overall GPA (17–18)	0.148	0.1 (0.1–1.9)	0.028*	0.1 (0.1–0.6)	0.130	0.2 (0.1–1.0)
Overall GPA (18–19)	0.451	1.0 (0.6–12.2)	0.190	0.1 (0.1–4.5)	–	–
Overall GPA (19–20)	0.573	5.9 (0.8–27.4)	0.999	6.8 (0.9–31.2)	–	–

* *P* value < 0.05

Immigration was an important reason for unwillingness to pursue specialty training among a notable minority of interns in our study. Although it was less common than fatigue and financial concerns, this finding is broadly consistent with a recent study among Iranian residents reporting high willingness to immigrate [Soltanizadeh et al. \(2025\)](#). It may indicate that immigration-related considerations begin to affect career decisions even before residency entry. In the context of the broader and ongoing brain drain in Iran, this finding warrants particular attention from policymakers. Efforts to strengthen the medical workforce should therefore address conditions that may encourage young physicians to consider leaving the country, thereby increasing the risk of future workforce losses.

In the present study, no statistically significant independent association was found between willingness to pursue specialty training and demographic or academic variables such as age, sex, entrance examination rank, admission quota, or GPA in the final regression model. This finding reinforces the idea that specialty choice is a complex process that is not easily explained by a limited set of measurable background variables. Although GPA categories showed temporary statistical significance in the age- and sex-adjusted model, these relationships did not persist in the final multivariable analysis. The absence of stable predictors suggests that unmeasured factors, such as personality traits [Kwon and Park \(2016\)](#); [Mullola et al. \(2018\)](#), lifestyle values [Dorsey et al. \(2003\)](#), role models [Elzubeir and Rizk \(2001\)](#); [Burack et al. \(1997\)](#), prior clinical experiences [Schoon and Kötter \(2024\)](#); [Querido et al. \(2020\)](#), perceptions of residency culture, and broader cultural expectations, may play a more important role.

The lack of a significant gender difference in the present study is also notable. In many previous studies, gender has been reported as an important factor in specialty choice, often with female students showing greater preference for specialties compatible with family life and less preference for highly demanding or time-intensive fields [Weissman et al. \(2012\)](#); [Shakurnia et al. \(2016b\)](#); [Harris et al. \(2005\)](#); [Shakurnia et al. \(2016a\)](#). In our study, however, such a difference was not statistically evident. This may indicate changing patterns of expectation among both male and female students, or it may reflect the limited sample size and local context. Therefore, although gender did not emerge as an independent predictor in the present study, it should not be dismissed as irrelevant without further multicenter and larger-scale investigation.

Similarly, marital status was not identified as an independent predictor in the final model, but it remains conceptually important. Family responsibilities, emotional support, financial stability, and future household planning may all influence decisions about whether and when to enter specialty training. In this sense, the absence of a statistical association in the present sample should be interpreted cautiously. Such factors may operate indirectly or interact with variables not captured in this study [Vahid Dastjerdi et al. \(2012\)](#); [Harris et al. \(2005\)](#).

The relatively lower importance of family recommendation compared with financial and personal motives is another meaningful finding. It suggests that, in this group of students, specialty selection was driven more by individual career planning than by direct family pressure. Nevertheless, the broader literature indicates that family background may still matter, especially when students have physician parents or close relatives who can serve as role models, provide information about certain specialties,

679 or create practical opportunities for future professional entry [Lima de Souza et al.](#)
680 [\(2015\)](#); [Sakaguchi et al. \(2026\)](#). Therefore, family influence may be subtle and indirect
681 rather than explicitly stated by students.

682 These findings also draw attention to the possible role of educational counseling
683 and career guidance. In many medical schools, students receive insufficient structured
684 information about the full range of available specialties, the realities of residency
685 training, and long-term career trajectories [Sahebari et al. \(2014\)](#). In such situations,
686 students may rely heavily on informal student culture, departmental atmosphere, anecdotal
687 impressions, or short-term experiences during rotations [Ossai et al. \(2016\)](#). This
688 may lead to exaggerated enthusiasm for some specialties and unfair discouragement
689 from others. A lack of formal advising may also result in a mismatch between a student's
690 personality, values, capabilities, and eventual specialty choice. Individual or
691 group-based career counseling, faculty mentorship, and structured orientation sessions
692 regarding residency options may therefore improve the quality of decision-making and
693 lead to better alignment between student preferences and health-system needs [Eldeek](#)
694 [\(2015\)](#).

695 From a policy perspective, the findings have several implications. First, the concentration
696 of interest in a limited number of specialties and the low attractiveness
697 of several others may contribute over time to imbalances in the physician workforce.
698 If such patterns continue, some fields may face an oversupply of physicians, whereas
699 others may experience persistent shortages [Leutritz et al. \(2024\)](#). Second, because economic
700 concerns were strongly linked to both willingness and unwillingness to continue
701 specialty training, policymakers should consider improving financial support mechanisms,
702 residency conditions, and future career incentives in less popular specialties.
703 Third, because clinical exposure appears to substantially shape preferences, improving
704 the educational environment of clinical departments may influence how students
705 perceive different specialties.

706 This study has several strengths. One important strength is the high response rate,
707 which may have been facilitated by careful electronic distribution of the questionnaire
708 to students on an individual basis. Although this method was time-consuming, it
709 appears to have improved participation and reduced missing data. Another strength is
710 the inclusion of students in the internship stage, which is an especially relevant period
711 for assessing specialty intention because students have already experienced substantial
712 clinical exposure and are closer to making actual residency decisions.

713 At the same time, several limitations should be acknowledged. First, the cross-sectional
714 design does not allow causal inference and cannot capture how preferences
715 may change over time. Specialty interest is dynamic, and a longitudinal design would
716 provide a clearer understanding of how clinical experiences, life events, and educational
717 progression influence decision-making [Zeldow et al. \(1992\)](#); [Ladha et al. \(2022\)](#); [Nguyen](#)
718 [et al. \(2025\)](#). Second, the sample size was relatively small, which may have limited
719 statistical power, particularly in regression analyses and subgroup comparisons. Third,
720 the study was conducted at a single university; therefore, the findings may not be fully
721 generalizable to students in other parts of Iran or in different educational settings.
722 Multicenter studies with larger and more diverse samples are needed to determine
723 whether the observed pattern is specific to this setting or reflects a broader trend.

724

Future research should therefore proceed in several directions. Studies involving multiple universities, including both public and private institutions, would improve generalizability. Longitudinal studies following students from preclinical years through internship and into residency application would be especially valuable for documenting changes in specialty preference over time. It would also be useful to examine factors not directly assessed in the present study, such as personality dimensions, perceived departmental climate, exposure to role models, and family medical background.

5 Conclusion

In conclusion, this study provides a useful overview of specialty preferences and their determinants among medical interns at Hormozgan University of Medical Sciences. The findings suggest that students are increasingly drawn to specialties perceived as offering better financial prospects, higher social status, and a more manageable lifestyle, whereas interest in more demanding specialties appears to be lower. At the same time, no independent demographic or academic predictor was identified in the final regression model, underscoring the complexity of specialty choice. These results highlight the importance of targeted career counseling, improved educational exposure to different specialties, and policy interventions aimed at reducing financial and structural barriers to residency training. Such efforts may help align student preferences more effectively with both personal career satisfaction and the long-term needs of the health system.

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Competing interests

The authors declare that they have no competing interests.

Author contributions

Pourya Kashefi Sis conceived the study and coordinated data collection from participants. Ali Shendabadi conducted the statistical analyses, interpreted the data, and drafted the manuscript. Nozhan Alimi provided supervision and expert input regarding the medical and clinical aspects of the study. Elham Boushehri supervised the data-management and statistical components of the research. All authors reviewed and approved the final manuscript.

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771 **Ethics declaration**

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773 The study was approved by the Ethics Committee of Hormozgan University of Medical
774 Sciences under ethics code IR.HUMS.REC.1402.130 on July 8, 2023.

775 **Consent to participate declaration**

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778 Participation was voluntary. Before completing the questionnaire, participants were
779 informed about the purpose of the study, and only those who agreed to participate
780 completed the form.

781 **Consent to publish declaration**

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784 Not applicable

785 **Availability of data and materials**

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787
788 The dataset supporting the conclusions of this article is available in Harvard Data-
789 verse, [https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/](https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/7UMX92)
790 [7UMX92](https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/7UMX92).

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