

# Factors Associated with Choice of Career in Family Medicine Among Junior Doctors in Oman

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## العوامل المرتبطة باختيار المسار الوظيفي في طب الأسرة بين الأطباء المبتدئين في عمان

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**ABSTRACT: Objectives:** The number of family physicians in Oman is far below that recommended by the World Health Organization. This study aimed to determine factors influencing junior doctors' choice of a career in family medicine. **Methods:** This cross-sectional study was conducted between March and June 2018 and targeted applicants to Oman Medical Specialty Board residency programmes during the 2018–2019 academic year. Applicants were grouped according to their choice of either family medicine (n = 64) or other specialties (n = 81). A self-administered questionnaire was utilised to compare the applicants' sociodemographic characteristics, factors influencing their choice of career and their Myers-Briggs Type Indicator® (MBTI) personality traits. **Results:** A total of 52 family medicine and 43 other residency applicants participated in the study (response rates: 81.3% and 53.1%, respectively). Most family medicine applicants were female (86.5%), married (65.4%) and resided in rural areas (73.1%); moreover, 19.2% were ≥30 years of age. Overall, emphasis on continuity of care, opportunity to deal with a variety of medical problems, the ability to use a wide range of skills and knowledge, early exposure to the discipline, opportunity to teach and perform research and the influence of family or friends were important factors in determining choice of a career in family medicine. Moreover, the MBTI analysis revealed that family medicine applicants were commonly extroverted-sensing-thinking-judging personality types. **Conclusion:** Knowledge of the factors influencing career choice among junior doctors may be useful in determining future admission policies in order to increase the number of family physicians in Oman.

**Keywords:** Career Choice; Internship and Residency; Medical Specialty; Family Practice; Family Physicians; Myers-Briggs Type Indicator; Oman.

**المخلص:** الهدف: يعتبر عدد أطباء الأسرة في عمان أقل كثيراً مما أوصت به منظمة الصحة العالمية. هدفت هذه الدراسة إلى تحديد العوامل التي تؤثر على اختيار الأطباء المبتدئين لمهنة طب الأسرة. **الطريقة:** تم إجراء هذه الدراسة المقطعية بين مارس ويونيو 2018 حيث استهدفت المتقدمين لبرامج التدريب في المجلس العماني للتخصصات الطبية خلال العام الدراسي 2018–2019. تم تجميع المتقدمين وفقاً لاختيارهم إما لطب الأسرة (العدد = 64) أو لتخصصات أخرى (العدد = 81). تم استخدام استبيان يتم تعبأته ذاتياً من قبل المشاركون لمقارنة الخصائص الاجتماعية والديموغرافية للمتقدمين، والعوامل التي تؤثر على اختيارهم للمهن المهنية والسمات الشخصية حسب مؤشر Briggs-Myers Type Indicator® (MBTI). **النتائج:** شارك في الدراسة ما مجموعه 52 من متقدمي برنامج طب الأسرة و 43 من المتقدمين للبرامج الأخرى (معدلات الاستجابة: 81.3% و 53.1% على التوالي). كما كان معظم المتقدمين لطب الأسرة من الإناث (86.5%)، المتزوجين (65.4%) والقاطنين في المناطق الريفية (73.1%); علاوة على ذلك، كان عمر 19.2% منهم 30 سنة فما فوق. وبشكل عام، كانت عوامل مثل التركيز على استمرارية الرعاية، وتوفير فرصة للتعامل مع مجموعة متنوعة من المشاكل الطبية، والقدرة على استخدام مجموعة واسعة من المهارات والمعرفة، وتلقي التدريب المبكر في التخصص، وتوفير فرصة التدريس وعمل بحوث طبية بالإضافة إلى التأثير بالأسرة أو الأصدقاء هي عوامل مهمة في تحديد اختيار مسار التدريب في طب الأسرة. علاوة على ذلك، كما كشف تحليل مؤشر MBTI أن شخصية المتقدمين لطب الأسرة كانت غالباً تتميز بالإنطلاق والحس بالمسؤولية والتفكير. **الخلاصة:** قد تكون معرفة العوامل التي تؤثر على اختيار المهنة بين صغار الأطباء مفيدة في تحديد سياسات القبول المستقبلية من أجل زيادة عدد أطباء الأسرة في عمان.

**الكلمات المفتاحية:** اختيار المهنة: التدريب والإقامة: التخصص الطبي: ممارسة طب الأسرة: أطباء الأسرة: مؤشر Myers-Briggs Type Indicator: عمان.

### ADVANCES IN KNOWLEDGE

- This study evaluates factors influencing choice of a career in family medicine compared with other specialties among Omani junior doctors applying to Oman Medical Specialty Board (OMSB) residency programmes.
- Various factors were found to predict choice of a career in family medicine including age, gender, marital status and place of residence.
- Moreover, applicants to the OMSB family medicine residency programme highlighted continuity of care, the opportunity to deal with a variety of medical problems, the ability to use a wide range of skills and knowledge and early exposure to the discipline as important influences on their choice of specialty.

### APPLICATION TO PATIENT CARE

- The findings of this study can be used by educators and OMSB administrators to modify admission policies in order to encourage selection of this medical specialty and address the severe shortage of family physicians in Oman.

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USING A COMMUNITY-ORIENTED AND COLLABORATIVE approach, family physicians provide comprehensive healthcare services to individuals and families throughout the course of their lifetime including a wide spectrum of diagnostic, treatment, maintenance, preventative, rehabilitative and palliative healthcare services.<sup>1,2</sup> In order to meet universal health coverage targets by 2030, the World Health Organization (WHO) Regional Office for the Eastern Mediterranean (EMRO), together with the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA), recommend that a minimum of three family physicians be employed per 10,000 individuals in the population.<sup>2</sup>

In Oman, family medicine was first recognised as a unique medical speciality in 1987 at the College of Medicine & Health Sciences at Sultan Qaboos University in Muscat.<sup>3</sup> Under the Oman Medical Specialty Board (OMSB), a four-year postgraduate training programme was established in 1994 and subsequently recognised by the Royal College of General Practitioners in 2001 and accredited by the Accreditation Council for Graduate Medical Education-International in 2017.<sup>3,4</sup> However, as of 2015, Oman had an average of 0.4 family physicians per 10,000 individuals, a number far below that recommended by the WONCA and WHO EMRO.<sup>2</sup>

Other countries have reported similar shortages of family physicians in their workforce.<sup>5,6</sup> Few junior doctors and medical students select family medicine as their top choice; for instance, the rate of selection of this speciality among Canadian medical graduates dropped from 40% in 1982 to 32% in 2010, falling as low as 23% in some schools.<sup>7</sup> In addition, a national survey of 39 medical schools in France indicated that the level of interest in primary care specialities was only 20%.<sup>8</sup> In southern Saudi Arabia, Mehmood *et al.* reported that the preferred speciality choices of medical students were surgery, internal medicine, paediatrics, orthopaedics and ophthalmology.<sup>9</sup> Another study from eastern Saudi Arabia found that only 9% of medical students and interns selected family medicine as a career choice in 2014.<sup>10</sup>

In light of these trends, medical education institutions and administrators have sought to identify factors which influence career choice among junior doctors in order to determine potential strategies to increase interest in this speciality. In Canada, Gill *et al.* identified various factors—such as emphasis on continuity of care, length of residency, influence of family, friends or community and preference for working in a rural community—as factors significantly

associated with the selection of family medicine compared to other specialties.<sup>7</sup> Other factors have also been found to predict this choice of speciality, including being female, older, engaged, having a lower interest in research, an increased desire for short postgraduate training and a lower preference for medical versus social problems.<sup>7,11–16</sup>

To the best of the authors' knowledge, no studies have yet determined factors influencing the selection of family medicine as a career choice in Oman. As such, this study aimed to identify the factors influencing Omani junior doctors in the selection of family medicine as opposed to other specialties when applying to residency programmes. These findings could be useful for strengthening OMSB residency programmes and determining admission policies in order to encourage interest in this speciality and increase the number of family physicians in Oman.

## Methods

This cross-sectional study was conducted between March and June 2018 at the OMSB. The entire cohort of applicants to OMSB residency programmes for the 2018–2019 academic year were contacted directly and invited to participate in the study. The applicants were subsequently divided into two groups according to their choice of career in either family medicine ( $n = 64$ ) or other specialties ( $n = 81$ ).

A three-part self-administered English-language questionnaire was used to collect data. The first part determined the participants' sociodemographic characteristics including age, gender, parental education level, presence of family or friends in family medicine or other medical fields and involvement in community programmes, volunteer work or research. The second part assessed factors influencing choice of speciality based on a previously validated survey from the University of Alberta in Canada.<sup>7</sup> Applicants were asked to rate the level of importance of each item on a scale from 1 to 5 in terms of influencing their career choice, with 1 being very unimportant and 5 being very important.<sup>7</sup> The third part of the questionnaire aimed to determine personality type according to the Myers-Briggs Type Indicator® (MBTI) personality inventory.<sup>17</sup>

The primary outcome of the study was factors influencing the choice of family medicine compared to other specialties among junior doctors. The secondary outcome was the most common personality type among those who selected family medicine as their career speciality. For the purposes of the analysis, participants' responses to the second part of the

questionnaire were grouped as either important (i.e. responses of somewhat important and very important) or not important (i.e. responses of very unimportant, somewhat unimportant and neither unimportant nor important).<sup>7</sup>

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS), Version 25.0 (IBM Corp., Armonk, New York, USA). The results were presented using descriptive statistics. Means and standard deviations were reported for continuous variables, while categorical variables were presented as frequencies and percentages. The association of the independent variables with outcome variables was calculated using non-parametric Kruskal-Wallis and Mann-Whitney-U tests. The level of two-tailed significance was set at  $P < 0.050$ .

The protocol for this study was approved by the Research Ethics Committee of the OMSB (REC/03/2018). Informed verbal consent was obtained from all applicants prior to their participation in the study. The individual contact details of the applicants were used with permission from the OMSB Admissions Office.

## Results

A total of 52 family medicine applicants and 43 applicants from other OMSB residency programmes agreed to take part in the study (response rates: 81.3% and 53.1%, respectively). Compared to those in other specialties, applicants to the family medicine programme were significantly more likely to be 30 years of age or older (19.2% versus 0%;  $P = 0.026$ ), female (86.5% versus 51.2%;  $P < 0.001$ ), married (65.4% versus 37.2%;  $P = 0.021$ ) and reside in rural areas (73.1% versus 67.4%;  $P = 0.005$ ). In addition, family medicine applicants were significantly more likely to have a family member or close friend practising family medicine (61.5% versus 2.3%;  $P < 0.001$ ) or other medical specialties (82.7% versus 41.9%;  $P < 0.001$ ) [Table 1].

Applicants rated the perceived importance of factors contributing to their choice of career. The vast majority of family medicine applicants believed the following factors to be important when it came to choosing their preferred specialty: the ability to use a wide range of skills and knowledge in patient care (92.3%), emphasis on continuity of care (90.4%), the opportunity to deal with a variety of medical problems (90.4%) and early exposure to the discipline (90.4%). In contrast, the most important factors rated by applicants to other specialties were the opportunity to deal with a variety of medical problems (93%), whether the specialty was compatible with their personality

**Table 1:** Sociodemographic characteristics of applicants to Oman Medical Specialty Board residency programmes (N = 95)

Characteristic	n (%)		P value
	Family medicine (n = 52)	Other medical specialties (n = 43)	
<b>Age in years</b>			<b>0.026</b>
<30	42 (80.8%)	43 (100)	
≥30	10 (19.2%)	0 (0)	
<b>Gender</b>			<b>&lt;0.001</b>
Female	45 (86.5)	22 (51.2)	
Male	7 (13.5)	21 (48.8)	
<b>Marital status</b>			<b>0.021</b>
Single	18 (34.6)	27 (62.8%)	
Married	34 (65.4)	16 (37.2%)	
Divorced/ widowed	0 (0)	0 (0)	
<b>Number of children</b>			<b>0.521</b>
0	34 (65.4)	30 (69.8)	
<2	13 (25)	13 (30.2)	
2–3	5 (9.6)	0 (0)	
<b>Maternal education level</b>			<b>0.009</b>
Illiterate	21 (40.4)	33 (76.7)	
School	23 (44.2)	7 (16.3)	
College	4 (7.7)	3 (7.0)	
Postgraduate	4 (7.7)	0 (0)	
<b>Paternal education level</b>			<b>&lt;0.001</b>
Illiterate	2 (3.8)	24 (55.8)	
School	32 (61.5)	5 (11.6)	
College	9 (17.3)	3 (7)	
Postgraduate	9 (17.3)	11 (25.6)	
<b>Place of residence</b>			<b>0.005</b>
Urban (Muscat)	14 (26.9)	14 (32.6)	
Rural (other regions)	38 (73.1)	29 (67.4)	
<b>Monthly income in OMR</b>			<b>0.020</b>
<1,000	12 (23.1)	26 (60.5)	
1,000–3,000	40 (76.9)	17 (39.5)	
>3,000	0 (0)	0 (0)	
<b>Presence of a family member or friend in family medicine</b>			<b>&lt;0.001</b>
Yes	32 (61.5)	1 (2.3%)	
No	20 (38.5)	42 (97.7)	

OMR = Omani riyals.

**Table 1 (cont'd):** Sociodemographic characteristics of applicants to Oman Medical Specialty Board residency programmes (N = 95)

Characteristic	n (%)		P value
	Family medicine (n = 52)	Other medical specialties (n = 43)	
<b>Presence of a family member or friend in other medical specialties</b>			<b>&lt;0.001</b>
Yes	43 (82.7)	18 (41.9)	
No	9 (17.3)	25 (58.1)	
<b>Involvement in community programmes</b>			<b>0.660</b>
Yes	38 (73.1)	31 (72.1)	
No	14 (26.9)	12 (27.9)	
<b>Involvement in volunteer work</b>			<b>0.650</b>
Yes	39 (75)	31 (72.1)	
No	13 (25)	12(27.9)	
<b>Involvement in research</b>			<b>0.220</b>
Yes	42 (80.8)	34 (79.1)	
No	10 (19.2)	9 (20.9)	

OMR = Omani riyals.

(93%) and the ability to master a small set of skills and be an 'expert' (93%).

There were statistically significant differences between family medicine applicants and those in other programmes with regards to the perceived importance of emphasis on continuity of care (90.4% versus 48.8%;  $P < 0.001$ ), early exposure to the discipline (90.4% versus 37.2%;  $P < 0.001$ ), opportunity for research (86.5% versus 51.2%;  $P < 0.001$ ), previous exposure to primary care practice (84.6% versus 0%;  $P < 0.001$ ), opportunity to teach (80.8% versus 34.9%;  $P < 0.001$ ), the influence of family or friends (71.2% versus 9.3%;  $P < 0.001$ ) and the intellectual content of the discipline (75% versus 30.2%;  $P < 0.001$ ).

In contrast, fewer applicants to the family medicine programme rated income potential (51.9% versus 100%;  $P < 0.001$ ) and perceived prestige (59.6% versus 81.4%;  $P = 0.020$ ) to be unimportant during career selection compared to applicants in other specialties. Regardless of specialty, most of the applicants reported that working hours/lifestyle, the length of the residency programme and a positive experience with a teacher or clinician of the specialty were important factors in their selection [Table 2]. Compared to other personality archetypes within the MBTI personality inventory, applicants to family medicine were most commonly extroverted-sensing-thinking-judging (ESTJ) types [Figure 1].

**Table 2:** Importance of factors influencing career choice\* among applicants to Oman Medical Specialty Board residency programmes (N = 95)

Item	Perceived importance, n (%)				P value
	Family medicine (n = 52)		Other medical specialties (n = 43)		
	UI	I	UI	I	
Income potential	27 (51.9)	25 (48.1)	43 (100)	0 (0)	<0.001
Perceived prestige	31 (59.6)	21 (40.4)	35 (81.4)	8 (18.6)	0.020
Emphasis on procedural skills	7 (13.5)	45 (86.5)	13 (30.2)	30 (69.8)	0.046
Specialty compatible with personality	7 (13.5)	45 (86.5)	3 (7)	40 (93)	0.305
Opportunity to teach	10 (19.2)	42 (80.8)	28 (65.1)	15 (34.9)	<0.001
Preference/influence of family, friends or community	15 (28.8)	37 (71.2)	39 (90.7)	4 (9.3)	<0.001
Perceived intellectual content of discipline	13 (25)	39 (75)	30 (69.8)	13 (30.2)	<0.001
Opportunity for research	7 (13.5)	45 (86.5)	21 (48.8)	22 (51.2)	<0.001
Opportunity to work on challenging cases	10 (19.2)	42 (80.8)	6 (14)	37 (86)	0.494
Opportunity to work on acute medical problems	7 (13.5)	45 (86.5)	10 (23.3)	33 (76.7)	0.215
Emphasis on continuity of care	5 (9.6)	47 (90.4)	22 (51.2)	21 (48.8)	<0.001
Opportunity to deal with a variety of medical problems	5 (9.6)	47 (90.4)	3 (7)	40 (93)	0.645
Early exposure to the discipline	5 (9.6)	47 (90.4)	27 (62.8)	16 (37.2)	<0.001
Length of residency	13 (25)	39 (75)	13 (30.2)	30 (69.8)	0.569
Ability to use a wide range of skills and knowledge	4 (7.7)	48 (92.3)	10 (23.3)	33 (76.7)	0.033

UI = unimportant; I = important. \*According to self-rated responses to a previously validated survey from the University of Alberta, Canada.<sup>11</sup> Each item was scored from 1 to 5, with 1 being very unimportant and 5 being very important.

**Table 2 (cont'd):** Importance of factors influencing career choice\* among applicants to Oman Medical Specialty Board residency programmes (N = 95)

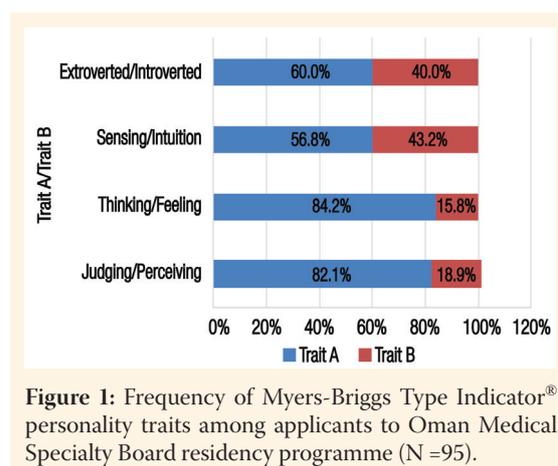
Item	Perceived importance, n (%)				P value
	Family medicine (n = 52)		Other medical specialties (n = 43)		
	UI	I	UI	I	
Working hours/lifestyle after completion of training	12 (23.1)	40 (76.9)	7 (16.3)	36 (83.7)	0.410
Previous exposure to primary care practice	8 (15.4)	44 (84.6)	43 (100)	0 (0)	<0.001

UI = unimportant; I = important. \*According to self-rated responses to a previously validated survey from the University of Alberta, Canada.<sup>11</sup> Each item was scored from 1 to 5, with 1 being very unimportant and 5 being very important.

## Discussion

As demonstrated by the WONCA and WHO EMRO report, there is an urgent need to address the shortage of approximately 185,497 family physicians in the Middle Eastern region.<sup>2</sup> Nevertheless, the selection of family medicine as a career choice by junior doctors remains a complex process affected by many factors related both to individual residency programmes, the healthcare system and the sociodemographic characteristics and personalities of the doctors themselves. Research examining these factors has been conducted in several countries for the purposes of modifying existing policy-building and decision-making processes in order to encourage more doctors to choose this specialty.<sup>7,9,12</sup>

In the current study, applicants to the OMSB family medicine residency programme were significantly more likely to be female, married and over 30 years of age. It is possible that married women prefer specialties in which they can have part-time duties so that they can more easily take care of their families. Similarly, a study conducted in Canada involving 16 medical schools found that being older and engaged were variables which predicted selection of a career in family medicine.<sup>6</sup> Likewise, more female medical students and interns in Saudi Arabia selected family medicine as their top choice compared to any other specialty.<sup>10</sup> In addition, family medicine applicants in the present study were significantly more likely to be from rural areas. This might be due to cultural differences, the presence of friends or family or the lack of family physicians in these areas compared to the capital. Other studies have reported comparable results.<sup>13,14,18</sup> As such, it is possible that increasing



**Figure 1:** Frequency of Myers-Briggs Type Indicator® personality traits among applicants to Oman Medical Specialty Board residency programme (N =95).

admission rates for female doctors from rural areas would help to eventually increase the number of family physicians in Oman.

The effect of role-modelling was apparent in the current study, as the majority of applicants rated a positive experience with a clinician/teacher as an important factor in their selection, regardless of specialty. Similar findings have also been reported in other studies.<sup>6,7,10,15</sup> Having a family member or close friend in the field of family medicine or other medical specialties can also have an effect on career selection.<sup>7,11,14–16</sup> In the present study, over half of this group had a friend or family member involved in this field; moreover, the influence of family, friends or community was perceived to be of great importance when making a career decision overall. Generally, the core principles of family medicine as a specialty were highly rated by the family medicine applicants and included continuity of care, the ability to use a wide range of skills and knowledge and early exposure to the discipline. Such factors are programme-specific and have also been rated highly elsewhere around the world.<sup>7,18,19</sup> Therefore, enabling the admission of junior doctors who have previous exposure to the field might add to the number who choose to become family physicians in future.

Interestingly, family medicine applicants in the current study reported being greatly influenced by the opportunity to teach and perform research; this conflicts with the findings of other studies.<sup>6,7,20</sup> This difference might be due to the growing need for general medical research in this region, as well as research specific to the field of family medicine. In addition, just over half of the family applicants rated income potential and perceived prestige as unimportant factors; this might be because most family medicine applicants were female and thus might be more concerned about their future quality of work, career development and time spent away from their families. This finding was also observed by other researchers.<sup>21</sup>

Personality may play a role when it comes to career choice and the selection of a medical specialty. However, studies which have investigated the effect of personality type using the MBTI personality inventory have revealed mixed results.<sup>22</sup> The MBTI inventory is used to assign one of 16 unique personality archetypes based on a sliding scale in four dichotomous categories: (1) extraversion versus introversion; (2) sensing versus intuition; (3) thinking versus feeling; and (4) judgement versus perception.<sup>17</sup> In the present study, the predominant personality archetype among those who selected family medicine as a specialty was ESTJ. This is similar to that observed in an older study conducted in 1976.<sup>23</sup> However, more recent studies have since found that the family medicine specialty is chosen more frequently by those who score highly in the feeling trait compared to the thinking trait.<sup>22,24</sup>

Certain limitations were present within the current study. Only junior doctors who applied to different OMSB residency programmes were targeted; as such, the study did not include the perspectives of medical students which would be an important addition to strengthen interest in the family medicine programme and encourage admissions. Additionally, the survey might not have addressed all factors influencing career choice; moreover, as the questionnaire was not originally designed for this population, some sociocultural factors unique to Oman might not have been considered. However, this limitation was partially resolved by including an option for “other” within the survey.

## Conclusion

According to international recommendations, there is a national shortage of family physicians in Oman. This study identified various factors which influenced the selection of family medicine as a residency specialty among junior doctors including an emphasis on continuity of care, the ability to use a variety of skills and knowledge and early exposure to the discipline. In addition, family medicine applicants were significantly more likely to be older, female, married and reside in rural areas compared to those in other specialties. These findings may be useful in modifying admission policies and encouraging interest in this choice of specialty among future doctors in Oman.

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Permission was received from the University of Alberta to use the survey assessing factors influencing choice of speciality.

## CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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