



Factors Influencing the Choice of Medical Specialty among Peruvian General Practitioners

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ABSTRACT

Aims It is important to know the factors that influence physicians when choosing a medical specialty so that authorities can improve the admission and selection processes for medical residency positions accordingly. This study aimed to determine the factors that influence the choice of medical specialty among general practitioners of Peru.

Instruments & Methods A cross-sectional study was conducted using a self-administered questionnaire and included 576 general practitioners who were preparing for the medical residency exam in Peru. To establish the association of demographic variables and other factors with the choice of medical specialty, we used Pearson's chi-square test or Fisher's exact test.

Findings Most participants were women (56.8%) under 30 years (79.2%). The specialties in high demand were pediatrics (11.1%), general surgery (7.3%), and gynecology and obstetrics (5.4%). Most physicians believed that their university education did not prepare them enough for the residency exam (59.8%). Moreover, 64% of the participants chose their specialty based on vocation and mainly intended to work in hospitals where they could better perform their clinical and surgery rotations (40.5%). Most participants did not consider the economic factor as decisive for choosing their medical specialty (76.3%). Male physicians ($p<0.0001$) and those who consider the economic factor ($p=0.008$) important for choosing their medical specialty were more likely to choose a surgical specialty.

Conclusion Physicians already have a fixed choice and do not choose specialties where there is less competition. Economic factors are not decisive in choosing a specialty. Additionally, we observed few applicants for primary care specialties.

Keywords Medical Residency; Healthcare System; Peru

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Introduction

The Peruvian health system is considered segmented, i.e. there are several health subsystems, the most important of which are the social health insurance (ESSALUD), the Ministry of Health, and the Armed Forces. There is also a private system for people who have private insurance or can pay directly for care [1-4].

The financing of each of these subsystems is different. The social health insurance subsystem is financed by contributions from formal workers. The Ministry of Health subsystem is financed mainly by a comprehensive health insurance (SIS), which is an insurance for people with limited economic resources, financed by the state. The armed and police forces finance their care from their own budget [5-7].

The intention to apply for a particular specialty is often based on the physician's experience as an undergraduate student since, in Peru, almost all medical training is provided in second and third-level care facilities, i.e., hospitals, and very few rotations are performed at the first level of care [8-10].

Another important point in the choice of the physician's specialty is that the first level of care facilities, especially those outside the capital of Peru, are located in areas with little economic and social development, so the living conditions of health professionals working there are not adequate, which does not allow adequate personal and family development. For this reason, few physicians apply for specialties such as family and community medicine [11-13].

In Peru, the time required for completing medical studies is seven years, after which students obtain the degree of a "medical surgeon." In their last year of university, students take the national medical examination (ENAM, examen nacional de medicina). Students must pass this exam to apply for membership in the Peruvian College of Physicians (Colegio Médico del Perú). Once their membership application has been approved, they are assigned a registration number that allows them to conduct professional practice in the Peruvian territory [14].

Additionally, if physicians wish to work in public institutions, they must take part in the Rural-Urban Health Service (SERUMS, Servicio rural urbano en Salud). This service is provided in primary care facilities located in places away from metropolitan cities. SERUMS is also a requisite for applying for a medical residency position [15].

In Peru, medical residency is offered by several public and private universities. However, training is carried out in different hospitals, mainly public and

sometimes private, called "training centers." The Peruvian Council of Medical Residency (CONAREME, Consejo Nacional de Residencia Médico) regulates the medical residency process in Peru. CONAREME is composed of representative hospitals, universities, and institutions such as the Medical College of Peru [16].

In Peru, young physicians without medical specialties are exposed to low-income jobs and high workloads [17]. Therefore, for many of them, applying for and accessing a medical specialty position is the only way to improve their working conditions. It is important to know the factors that influence Peruvian physicians when choosing a medical specialty so that competent authorities can improve the admission and selection processes for medical residency positions in Peru accordingly. Therefore, this study was conducted with the aim of determining the factors that influence the choice of medical specialty among general practitioners of Peru.

Instruments and Methods

This was a cross-sectional study conducted in an in-person mock medical residency exam in Lima in July 2017.

General practitioners that were preparing for the residency exam at the time of the interview, excluding those who did not want to participate in the study, were included. No sampling was performed since it was a small and accessible population. A total of 576 physicians were included; the response rate was 95%.

An ad-hoc survey was designed, which had three sections-sociodemographic factors, factors influencing the choice of medical specialty, and factors related to working at the primary care level. The two first sections were included in this paper.

Analyzed variables included age, sex, marital status, number of children, and work status. Factors influencing the choice of medical specialty were the graduate university, preparation received from the graduate university, place where they applied for the residency exam, the importance of attending a preparatory school, the scores expected by the participants, factors related to the university where they would apply, participants' vocation, level of competition from other applicants, participants' income, and where they planned to work after receiving their medical residency.

First, the purpose of the study was explained to the participants. Then, the questionnaire was self-administered by the physicians in the classrooms before proceeding to the mock exam. A database was created for processing and analyzing the data using

the SPSS 22.0 program. A descriptive analysis was conducted by calculating frequencies, percentages, measures of central tendency, and dispersion.

To establish the association of demographic variables and other factors with the choice of medical specialty, we used Pearson's chi-square test or, if necessary, Fisher's exact test was used. Calculations were performed with a confidence level of 95%.

Findings

Sociodemographic factors

This study included 576 general practitioners, of which 56.8% were females. Most of them were between 25 and 30 years of age (70.1%), and 66.5% (383) were unemployed at the time of the study and fully dedicated to the preparation for the medical residency exam (Table 1). Furthermore, 48.1% of physicians applied to clinical specialties, 46.4% to surgical specialties, and 5.6% to other specialties (Table 2). The specialties that received the highest number of applicants were pediatrics (11.1%), general surgery (7.3%), and gynecology and obstetrics (5.4%).

Table 1) Frequency distribution of sociodemographic factors of physicians that applied for the medical residency exam

Sociodemographic factors	N	%
Age, y		
<25	55	9.5
25-30	404	70.1
31-35	90	15.6
36-40	16	2.8
>40	11	1.9
Sex		
Male	249	43.2
Female	327	56.8
Marital status		
Single	501	87.0
Married	43	7.5
Cohabitant	32	5.6
Children		
No children	507	88.0
One child	54	9.4
Two or more children	15	2.6
Employment		
Unemployed	383	66.5
Working in MINSA*	51	8.9
Working in EsSalud**	18	3.1
Working in a private company	110	19.1
Self-employed	14	2.4
Total	576	100.0

*MINSA: Ministry of Health

**EsSalud: Social Health Insurance

Factors influencing the choice of medical specialty

Most participants graduated from private universities (55.2%), and 37.3% reported having received a good level of preparation for the medical residency exam from their university. However, most of them (46.5%) described their preparation as

average. In addition, 47.9% (276) participants were unemployed and went to a preparatory school. Most participants agreed that preparation by attending a preparatory school is decisive to get the medical residency (46.5% agreed and 31.8% strongly agreed).

Table 2) Specialties that physicians applied for

Specialty	N	%
Clinical specialty		
Pediatrics	64	11.1
Cardiology	31	5.4
Physical medicine and rehabilitation	27	4.7
Dermatology	23	4.0
Gastroenterology	22	3.8
Psychiatry	21	3.6
Endocrinology	16	2.8
Internal medicine	13	2.3
Neurology	10	1.7
Geriatrics	9	1.6
Nephrology	8	1.4
Intensive care medicine	4	0.7
Pneumology	4	0.7
Hematology	4	0.7
Medical oncology	4	0.7
Rheumatology	4	0.7
Family and community medicine	3	0.5
Emergency and disaster medicine	3	0.5
Neonatology	1	0.2
Infectious and tropical diseases	1	0.2
Medical genetics	1	0.2
Sports medicine	1	0.2
Forensic medicine	1	0.2
Nuclear medicine	1	0.2
Occupational medicine	1	0.2
Surgical specialty		
General surgery	42	7.3
Gynecology and obstetrics	31	5.4
Anesthesiology	29	5.0
Traumatology and orthopedics	27	4.7
Ophthalmology	23	4.0
Otolaryngology	23	4.0
Urology	16	2.8
Neurosurgery	14	2.4
Head and neck surgery	13	2.3
Oncologic surgery	13	2.3
Thoracic and cardiovascular surgery	11	1.9
Plastic surgery	11	1.9
Pediatric surgery	9	1.6
Head and neck surgery	5	0.9
Others		
Radiology	18	3.1
Pathological anatomy	6	1.0
Administration and health management	4	0.7
Clinical pathology	2	0.3
Radiotherapy	2	0.3
Total	576	100

For application, most physicians chose the university that had the best hospitals for professional practice based on their opinion (40.5%). Most thought that profession played an important role in determining the medical specialty they wanted to apply for (36.6%), and some described it as a deciding factor (27.4%). Moreover, 31.3% of participants responded that the expected level of competition did not influence their choice of specialty at all, and 22.6%

responded that it had little influence on their decision.

Regarding whether the prospect of a good salary was a decisive factor in choosing their specialty, most participants (34.9%) responded that it had a moderate influence on their decision, and 21.4% responded that it had little influence. Almost half of the physicians (49.5%) responded that they intended to work in the public sector at the end of their residency (Table 3).

Table 3) Factors influencing the choice of medical specialty

Academic factors	N	%
Type of graduate university		
National	214	37.2
Private	318	55.2
Foreign	44	7.6
The level of preparation provided by the university for taking the medical residency exam was...		
Very good	16	2.8
Good	215	37.3
Average	268	46.5
Bad	56	9.7
Very bad	21	3.6
Place of preparing for the medical residency exam		
In a preparatory school while not working	276	47.9
In a preparatory school while working	206	35.8
On my own while working	60	10.4
On my own while not working	17	3
None of the above	17	3
Attending a preparatory school is decisive to gain access to medical residency.		
Strongly agree	183	31.8
Agree	268	46.5
Neither agree nor disagree	57	9.9
Disagree	46	8
Strongly disagree	22	3.8
The score I believed I will get will influence the medical specialty I choose.		
It influenced my decision	41	7.1
It highly influenced my decision	85	14.8
It moderately influenced my decision	173	30
It did not influence much	115	20
It had no influence at all	162	28.1
Which of the following factors influence you the most while choosing a university?		
Best hospitals offered	233	40.5
Number of vacancies	200	34.7
University's prestige	102	17.7
University where I studied	23	4
Application fee and monthly fees	18	3.1
Did vocation influence the choice of specialty?		
It influenced my decision	158	27.4
It highly influenced my decision	211	36.6
It moderately influenced my decision	111	19.3
It did not influence much	69	12
It had no influence at all	27	4.7
Did the level of competition from other applicants influence the specialty you chose?		
It influenced my decision	45	7.8
It highly influenced my decision	96	16.7
It moderately influenced my decision	125	21.7
It did not influence much	130	22.6
It had no influence at all	180	31.3
Did the prospect of a good salary influence the specialty you chose?		
It influenced my decision	32	5.6
It highly influenced my decision	105	18.2
It moderately influenced my decision	201	34.9
It did not influence much	123	21.4
It had no influence at all	115	20
At the end of the residency, where do you intend to work?		
In the public sector	285	49.5
In a private company	125	21.7
Abroad	75	13
Self-employment	64	11.1
None of the above	27	4.7
Total	576	100

In terms of association between independent factors and the choice of specialty, being male ($p<0.0001$) and the prospect of a good salary ($p=0.008$) were associated with choosing a surgical specialty (Table 4).

Table 4) Sociodemographic factors and factors influencing the choice of medical specialty according to the type of specialty

Variables	Surgical		Nonsurgical		p value
	N	%	N	%	
≤35 years	256	95.90	293	94.80	0.549
Male	143	53.60	106	34.30	<0.001
Married	29	10.90	46	14.90	0.152
Having children	30	11.20	39	12.60	0.61
Currently working	94	35.20	99	32.00	0.422
Comes from a Peruvian university	102	38.20	112	36.20	0.628
Received a good level of preparation at university	111	41.60	120	38.80	0.504
Went to a preparatory school	221	82.80	261	84.50	0.583
Preparation is decisive to access the residency	215	80.50	236	76.40	0.228
The score I believed I will get in the exam influenced the specialty I chose	58	21.70	68	22.00	0.935
Most decisive factor for choosing a university					
University's prestige	53	19.90	49	15.90	0.591
Number of vacancies offered	93	34.80	107	34.60	
Best hospitals	102	38.20	131	42.40	
Other	19	7.10	22	7.10	
Did vocation influence your choice of specialty?	174	65.20	195	63.10	0.607
Did the level of competition from other applicants influence your choice of specialty?	65	24.30	76	24.60	0.944
The prospect of a good salary influenced the specialty I chose.	77	28.80	60	19.40	0.008
Do you plan to work in the public sector at the end of your residency?	138	51.70	147	47.60	0.325
Total	267	100	309	100	-

Discussion

In this study, physicians believed that they did not receive an adequate level of preparation from their university for the medical residency exam, which is why they deemed additional preparation for the test as necessary. In addition, they chose their specialty based on vocation, mainly looking for hospitals where they could better carry out their clinical rotations. Most did not consider the economic factor as decisive in choosing their medical specialty.

Most participants were women under the age of 30 years who belonged to private universities; this was similar to previous studies conducted in Peru [18]. Moreover, a high percentage of participants considered their university provided an average level of preparation for the medical residency exam. In Peru, students in their last year of medical studies think that they are not sufficiently prepared for the ENAM [19]. For this reason, many Peruvian students

and physicians prepare themselves in a preparatory school to pass the medical residency exam [20]. Our study shows that most physicians consider preparation in a school important for joining a medical specialty.

Most participants chose their specialties based on vocation and did not necessarily choose specialties that they could access with lower grades. In Peru, we observe that certain medical specialties are chosen by many physicians, whereas other specialties have few applicants.

A previous study carried out in Peru shows that physicians mainly apply for specialties such as pediatrics and gynecology. These specialties, along with general surgery and internal medicine, are compulsory for the internship (last year of medical school) of Peruvian physicians, which is why many students may feel more inclined to apply for them [21]. Furthermore, in Peru, these are the specialties that have more vacancies. However, we can also see that many physicians apply for specialties like cardiology, dermatology or ophthalmology, which have few vacancies compared to other specialties like gynecology, pediatrics, internal medicine, or general surgery.

Another point to bear in mind is that there are few applicants for specialties that are important to the Peruvian healthcare system, such as internal medicine or family medicine. Unfortunately, in the case of family medicine, the primary care service is not sufficiently supported by the government, which prioritizes secondary and tertiary care services. It makes physicians not interested in working in primary care facilities [22]. Similarly, physicians that complete their family medicine specialization are often unable to get job positions that provide remuneration according to their level of education [23].

An important point that we noticed was that the prospect of a good remuneration was not a decisive factor for choosing the specialty. This differs from the results found in a study conducted in Peru, where 90% of participants considered that improving their income was important or very important for choosing a medical specialty [23]. We consider that most physicians that apply for a medical residency do so to improve their income. However, our study focuses on the specific specialization for which they are going to apply.

Nevertheless, when comparing different specialties, we found that physicians who considered income the most important factor mainly applied for surgical specialties. In Peru, studies show that medical students with higher economic aspirations apply to surgical specialties [24].

Another important finding was that males are more likely to choose a surgical specialty. Additionally, previous studies show that women are less likely to choose surgical specialties. Authors indicate that in order to improve access to surgical specialties, there should be an improvement in effective tutoring, training opportunities, and workload reduction [25].

This study may help educational institutions to consider the opinions expressed by applicants to the medical residency program and better orient the vacancies offered.

Among the limitations of this study is that other important factors, such as the prestige of the specialty, possibility of having more free time, guidance from a family member or a friend, the possibility to do research, etc., were not questioned. However, we consider these results important since they provide an approximation of the factors that influence Peruvian physicians while choosing their medical specialty. Future studies could be done on a larger sample of applicants for the medical residency, including those who present at hospitals in different regions of Peru.

Conclusion

Physicians already have a predetermined choice of medical specialty and do not necessarily consider the level of competition while applying for a medical specialty. They also do not consider the economic factor as decisive for choosing their specialty. This could explain the high percentage of applicants in specialties that offer a higher “professional prestige”, since medical education in Peru is provided in establishments of secondary and tertiary care sectors. Furthermore, few physicians apply for specialties that mostly involve primary care services. Therefore, authorities must inform general practitioners regarding the most required specialties in the Peruvian healthcare system to raise their interest in applying for specialties that are a priority for the healthcare system.

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Ethical Permission: The methodology used was consistent with the Declaration of Helsinki, and participants provided informed consent to participate in this study. The postgraduate section of the Faculty of Medicine of Universidad Nacional Mayor de San Marcos gave the research exemption status after it was determined that this study an educational research and would not affect medical residency applicants. Ethical approval was not needed for this study. The confidentiality of study participants' information was maintained by taking the data anonymously.

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