

Preference of medical specialties among medical students in a Chilean university

Joaquin Zuñiga-Soria^{a*}, Karla Soria-Barreto^b, Martin Zuñiga-Soria^a, Francisco Riveros-Montero^a

^a Facultad de Medicina, Universidad Católica del Norte, Coquimbo, Chile

^b Escuela de Ciencias Empresariales, Universidad Católica del Norte, Coquimbo, Chile

* Corresponding author

joaquin.zuniga@alumnos.
ucn.cl

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Postal address

Larrondo 1281, Coquimbo,
Chile

Abstract

This study describes medical specialty preferences expressed by medical students at a regional university in northern Chile. This descriptive study is based on primary information with a sample of 266 valid responses and a response rate of 58.7%. The information was collected through a Google Forms questionnaire before voluntary consent of participation from May to July 2022. We found that the medical specialties preferred by the Universidad Católica del Norte students were clinical specialties, including internal medicine, and medical-surgical specialties, including emergency medicine and gynecology-obstetrics. Women markedly predominated in child and adolescent psychiatry, gynecology-obstetrics, pediatric surgery, pediatrics, and family medicine, while men predominated in radiology and anesthesiology, both associated with indirect patient interaction. We also found that surgical specialties, traditionally preferred by men, could be in the process of generational change, as there is an increase in the presence of women, especially in general surgery.

MAIN MESSAGES

- ◆ The training of medical specialists in Chile is a nationwide problem, with profound deficits in certain specialties, directly affecting healthcare users.
- ◆ This study provides background information to guide incentive programs for medical specialties that are in deficit in Chile.
- ◆ The limitations of this study are related to the type of sampling used, which was non-probabilistic.

INTRODUCTION

Training specialist physicians in Chile is a nationwide problem [1]. In 2014, it was estimated that there was a deficit close to 3795 specialist physicians, affecting the medical care of more than 1.5 million users [2].

Factors associated with the decision to choose a medical specialty are the lifestyle of each specialty [3], content and individual competencies [4], the student's gender [5], sociodemographic aspects (urban or rural), parental influence, expected income, prestige, type of future patients, and the possibility of continuous improvement [6].

Rojas-Quijada and Bianchet [3] observed a positive association between female students and the intention to pursue gynecology-obstetrics, pediatrics, pediatric surgery, and dermatology, while Ng-Sueng et al. [7] found that male students tend to prefer surgical specialties such as general surgery.

Our study may orient incentive programs toward medical specialties that are in deficit in Chile [8] as it aims to describe the medical specialties preferences of medical students grouped into four main categories: clinical, surgical, medical-surgical, and laboratory-diagnostic specialties. In addition, empirical evidence is provided on the differences by gender and the type of educational establishment of origin.

METHODS

This study has a quantitative approach with descriptive scope. The information was collected through a questionnaire containing informed consent that had to be accepted by the student to access a link to the Google Forms platform.

The survey was validated through the judgment of three experts and had a total of 14 questions, where the first ten collected sociodemographic data (gender, age, parents' education, type of educational establishment of graduation, among others), and the remaining four questions collected information regarding medical specialty interests.

The sampling was non-probabilistic by sending the link to all medical students of the seven years of the medical career at the Universidad Católica del Norte, Coquimbo, Chile. The final sample consisted of 266 students who gave valid answers,

equivalent to a response rate of 58.7%, considering a total of 453 students in the career.

For the analysis, the specialties were grouped into four main categories:

- 1) Clinical specialties.
- 2) Surgical specialties.
- 3) Medical-surgical specialties.
- 4) Laboratory-diagnostic specialties.

Descriptive statistics, frequency tables, and graphs were used. Stata software was used for all analyses.

RESULTS AND DISCUSSION

Of the total sample, 52% were female, 45% were male, and 3% were of other genders. In addition, 57% of the fathers and 60% of the students' mothers had higher education. The average age of the students had a mean age of 22 years (standard deviation: 2.88 years), and most came from subsidized private schools (61%) (shared financing between state and parental contributions), did not have children (98%), did not work (94%), and did not have a medical relative (82%). Moreover, 94% of students declared interest in studying a medical specialty, and 48% expected to earn between 3 and 5 million Chilean pesos monthly.

The medical specialty most chosen by the students was internal medicine (25%), followed by general surgery (13%), pediatrics (8%), psychiatry (8%), emergency medicine (7%), family medicine (6%), gynecology-obstetrics (4%) and traumatology-orthopedics (3%). These results are consistent with studies in Taiwan and Germany by Chang et al. [4] and Kiolbassa et al. [9], respectively. We did not find information regarding emergency medicine, probably because it is a relatively new medical specialty, and the studies reviewed did not reflect this interest yet.

We found that there are specialties with pronounced gender asymmetries, such as child and adolescent psychiatry, with exclusivity for the women gender. In gynecology-obstetrics, more than 85% of those interested are women, similar to pediatric surgery (75%). These results align with Ng-Sueng et al. [7], who found that women prefer specialties such as gynecology-obstetrics, pediatrics, pediatric surgery, dermatology, and oncology. Historically, surgical specialties have been dominated by

men. However, our results show that women predominate in general surgery (62%), which could be explained by a generational change in surgical specialties.

On the other hand, we also found that medical students interested in radiology are exclusively men and that most students interested in anesthesiology (more than 70%), and traumatology-orthopedics, urology, otorhinolaryngology, and neurosurgery (more than 65%) are also men, which is consistent with the results obtained by Ng-Sueng et al. [7] regarding traumatology-orthopedics, otorhinolaryngology, and neurosurgery.

Heiligers [10] analyzed the differences by gender when choosing a medical specialty in the Netherlands, observing that the primary motivations for men are income, status, and technical aspects of the job. Our results may resemble these preferences as anesthesiology, radiology, traumatology-orthopedics, and otorhinolaryngology are dominated by men and are among the best-paid specialties.

According to the classification used in this study, the most attractive specialties were clinical specialties (58%) – including internal medicine, family medicine, neurology, pediatrics, and psychiatry –, followed by medical-surgical (23%) – including dermatology, gynecology-obstetrics, emergency medicine, ophthalmology, otorhinolaryngology, traumatology-orthopedics, and urology –, and surgical specialties (17%) – including neurosurgery and general surgery. Finally, laboratory-diagnostic specialties (2%), such as radiology and pathological anatomy, were the least attractive in this study.

We found that clinical specialties, having the highest degree of interaction with the patient, were among the highest chosen by the students and that laboratory-diagnostic specialties, having almost null interaction with patients, were among the least

chosen. These findings are intriguing, as they show that students tend to prefer specialties with a closer doctor-patient relationship. Likewise, there was a preference for medical-surgical specialties over exclusively surgical ones, supporting the fact that students favor specialties with greater contact with patients. These results are consistent with the findings of Kiolbassa et al. [10] in Germany, who determined that patient orientation was the most important motivational aspect when deciding on a medical specialty.

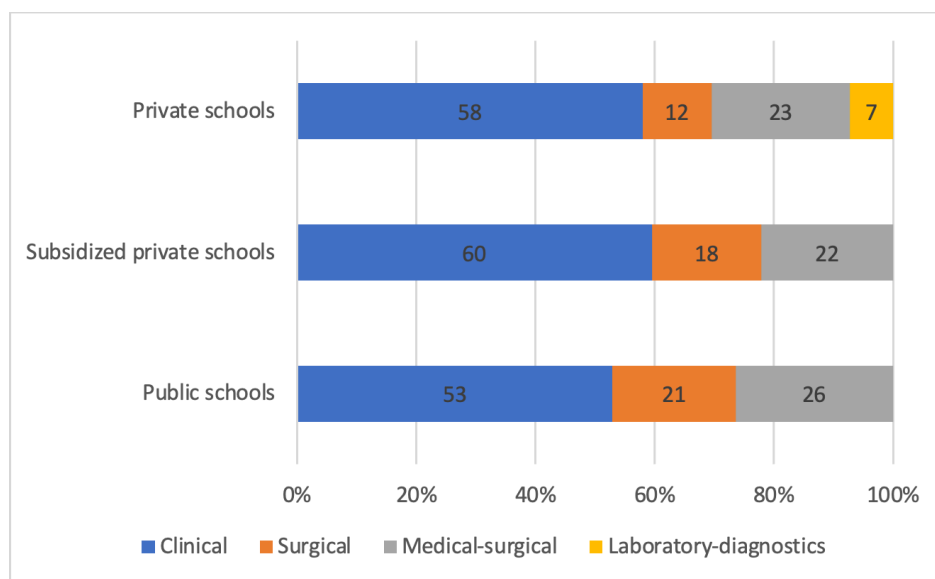
Figure 1 shows that, although clinical specialties are the most attractive regardless of the secondary school, students from municipal schools have a greater relative interest in surgical and medical-surgical specialties than those from private and subsidized private schools. In other words, it would seem that the higher the socioeconomic level according to the type of school, the lower interest in specialties that involve surgical interventions.

CONCLUSIONS

The most attractive specialties for medical students at the Universidad Católica del Norte align with the available literature. Clinical specialties such as internal medicine and medical-surgical specialties are the most preferred by students. The students participating in the study favor those specialties with a closer doctor-patient relationship than those with less exposure to patients.

On the other hand, this study shows that gender may determine predominance in certain medical specialties, as women stand out in those specialties exposed to younger patients, while men

Figure 1. Distribution by type of medical specialty according to the type of secondary school (percentage).



Source: Prepared by the authors of this study.

predominate in specialties where the relationship with the patient is scarce.

We also observed that surgical specialties, traditionally preferred by men, could be in the process of generational change, as the presence of women is increasing in these specialties, especially in general surgery.

Notes

Contributor roles

JZS, KSB, MZS, FRM: conception and design of the work, collection, drafting of the manuscript, conclusions, critical revision of the manuscript, and approval of the final version. MZS, FRM: Introduction. KSB: analysis and interpretation of the data. JZS: Results.

Competing interests

The authors declare that they have no conflicts of interest associated with this study.

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Ethics

The scientific ethics committee of the Universidad Católica del Norte approved the research project with an official letter CEM UCN N°18 July 22, 2022.

Data sharing statement

The database for this study is available upon request.

Provenance and peer review

Unsolicited. With external review by three peer reviewers, double-blind.

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References

1. Morán-Barrios J, Ruiz de Gauna P, Ruiz Lázaro PM, Calvo R. Metodologías complementarias de aprendizaje para la adquisición de competencias en la formación de especialistas y actividades profesionales confiables. *Educación Médica*. 2020;21: 328–337. <https://doi.org/10.1016/j.edumed.2020.02.001> <https://doi.org/10.1016/j.edumed.2020.02.001>
2. Clouet-Huerta DE, González B, Correa K. Especialización médica en Chile: tipos, mecanismos y requisitos de postulación. Una actualización de los procesos para los médicos generales. *Rev méd Chile*. 2017;145: 1454–1462. <https://dx.doi.org/10.4067/s0034-98872017001101454> <https://doi.org/10.4067/s0034-98872017001101454>
3. Rojas-Quijada C, Bianchet C. Elección de especialidad médica en estudiantes de medicina de la Universidad de Oriente, Ciudad Bolívar, Venezuela. *FEM*. 2021;24: 91. <https://dx.doi.org/10.33588/fem.242.1116> <https://doi.org/10.33588/fem.242.1116>
4. Chang P-Y, Hung C-Y, Wang K-I, Huang Y-H, Chang K-J. Factors influencing medical students' choice of specialty. *J Formos Med Assoc*. 2006;105: 489–96. [https://doi.org/10.1016/s0929-6646\(09\)60189-3](https://doi.org/10.1016/s0929-6646(09)60189-3)
5. Baxter N, Cohen R, McLeod R. The impact of gender on the choice of surgery as a career. *Am J Surg*. 1996;172: 373–6. [https://doi.org/10.1016/S0002-9610\(96\)00185-7](https://doi.org/10.1016/S0002-9610(96)00185-7)
6. Bland CJ, Meurer LN, Maldonado G. Determinants of primary care specialty choice: a non-statistical meta-analysis of the literature. *Acad Med*. 1995;70: 620–41. <https://doi.org/10.1097/00001888-199507000-00013>
7. Ng-Sueng LF, Vargas-Matos I, Mayta-Tristán P, Pereyra-Elías R, Montenegro-Idrogo JJ, Inga-Berrosapi F, et al. Gender Associated with the Intention to Choose A Medical Specialty in Medical Students: A Cross-Sectional Study in 11 Countries in Latin America. *PLoS One*. 2016;11. <https://doi.org/10.1371/journal.pone.0161000> <https://doi.org/10.1371/journal.pone.0161000>
8. Torres-Quevedo R. Déficit de médicos especialistas en las regiones y en el sistema público. *Revista Chilena de Cirugía*. 2016;68: 279–280. <https://doi.org/10.1016/j.rchic.2016.05.001> <https://doi.org/10.1016/j.rchic.2016.05.001>
9. Kiobassa K, Miksch A, Hermann K, Loh A, Szecsenyi J, Joos S, et al. Becoming a general practitioner - Which factors have most impact on career choice of medical students? *BMC Fam Pract*. 2011;12: 25. <https://doi.org/10.1186/1471-2296-12-25> <https://doi.org/10.1186/1471-2296-12-25>
10. Heiligers PJ. Gender differences in medical students' motives and career choice. *BMC Med Educ*. 2012;12. <https://doi.org/10.1186/1472-6920-12-82>

Preferencia de especialidades médicas en estudiantes de medicina de una universidad chilena

Resumen

En este trabajo se describen las preferencias de elección de especialidad médica que manifiestan los estudiantes de la carrera de medicina de una universidad regional del norte de Chile. Se trata de un estudio descriptivo basado en información primaria con una muestra de 266 respuestas válidas, con una tasa de respuesta de 58,7%. La información se recogió a través de un cuestionario disponible en Google Forms, previo consentimiento voluntario de participación, durante los meses de mayo a julio de 2022. Se encontró que las especialidades médicas preferidas por los estudiantes de la Universidad Católica del Norte fueron las especialidades clínicas como medicina interna y las médico-quirúrgicas como medicina de urgencias y ginecología-obstetricia. Además, existen especialidades con un claro predominio femenino como psiquiatría infanto-adolescente, ginecología-obstetricia, cirugía pediátrica, pediatría y medicina familiar, mientras que el predominio masculino destaca en radiología y anestesiología, ambas asociadas a un trato indirecto con el paciente. Se observó que las especialidades quirúrgicas, tradicionalmente preferidas por hombres, podrían estar en proceso de cambio generacional, aumentando la presencia femenina en ellas, sobre todo en cirugía general.



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