

Description of Medical Career Choices during the COVID-19 Pandemic for Students of the Medical Profession Study Program, Faculty of Medicine, Tanjungpura University

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ABSTRACT

Introduction: Government policies during the coronavirus disease (COVID-19) pandemic have limited the clinical rotation learning system of the Medical Faculty at Tanjungpura University. This study examined the description of medical career choices during the COVID-19 pandemic for students of the Medical Profession Study Program, Faculty of Medicine, Tanjungpura University.

Methods: This was a descriptive study using a quantitative method in the form of a questionnaire. A total of 138 students were selected through the purposive sampling technique (n=138). The variables were then measured using a medical career choice questionnaire. The obtained data were further processed using the International Business Machines Corporation (IBM) Statistical Package for Social Sciences (SPSS) for Windows version 23.0 and Microsoft Excel 2013.

Results: Study results showed that from 138 samples (n=138), students chose careers as general practitioners (male=17.5%; female=16%), specialist doctors (male=70%; female=73%), lecturers (female=2%), structural doctors (male=5%; female=6%), and non-medical careers (male=7.5%; female=2%). Regarding their preferred workplace, students chose the government hospital (male=40%; female=47%), private hospital (male=37%; female=32%), public health center (male=7%; female=9%), private clinic (male=5%; female=4%), state-owned clinic (male=3%, female=1%), military (male=5%, female=2%), ministry (male=3%; female=1%), educational institution (female=3%), and police (female=1%).

Conclusion: The most sought-after medical career choices and institutions were obstetrics and gynecology specialists and hospitals. Factors that influenced the selection of a medical career were personal and professional characteristics, employment conditions, personal life, preclinical and clinical rotation phase, demands of postgraduate education, and family roles. Conducting further research to determine the factors that influence the choice of a medical career by using mixed-method research or qualitative interviewing is recommended.

Highlights:

1. The most sought-after medical career choices and institutions were specialist doctors and hospitals.
2. The most sought-after medical career choices were obstetrics and gynecology specialists.

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Introduction

The medical field offers a wide range of diverse career opportunities. A doctor's career choice can be divided into two main groups: clinicians and non-clinicians. A small number of doctors also pursue career choices outside the medical field (non-medical), such as entrepreneurs.¹ Medical career choices and preferences can be shaped while students are still studying at the medical faculty and can be influenced by many factors as knowledge and experience expand throughout their study.²

The results of interviews with medical students at the Faculty of Medicine, Tanjungpura University, revealed several changes in the learning process during the coronavirus disease (COVID-19) pandemic. These changes resulted in limited learning facilities, reduced guard hours, and several meetings being held online. The COVID-19 pandemic has caused limitations during clinical clerkship training experiences, such as the abolition of night duty. The knowledge gained during the night duty at several stations can be crucial, namely at the obstetrics and gynecology station. In addition, the forensic stations were conducted online, and the policy during the COVID-19 pandemic did not allow clinical clerkship students to make contact with patients with respiratory problems, limiting the experience they gained.

Hassan, *et al.* (2020) and Györfy, *et al.* (2016) stated that altruism is the primary motivation for students in choosing a career as a clinician, especially for students who desire to serve the community during the COVID-19 pandemic.³⁻⁵ On the other hand, a study by Kelly, *et al.* (2021) stated that fear of infection and transmitting the disease to families, heavy work intensity, limited medical equipment, psychological pressure, and stress experienced by health workers during the COVID-19 pandemic caused students to worry about choosing their career path as a clinician.⁵⁻⁷

The results of several studies regarding medical career choices before COVID-19 reported that the majority of respondents chose to become clinicians, and only a few chose to be non-clinicians.^{1,8} The tendency for high interest in specific career fields can impact shortages for doctors in certain functions.⁹ This study examined the medical career choices for students of the Medical Profession Study Program at the Faculty of Medicine, Tanjungpura University, during the COVID-19 pandemic.

Methods

This was a descriptive study using quantitative methods conducted at the Faculty of Medicine, Tanjungpura University, from January to September 2022. The target population was students of the Medical Profession Study Program, Faculty of Medicine, Tanjungpura University. The reachable population consisted of active students in the Medical Profession Study Program, Faculty of Medicine, Tanjungpura University, with a total of 210 students. The sample of this study was 138 students of the Medical Profession Study Program, Faculty of Medicine, Tanjungpura University, who met the inclusion criteria. The

sample was selected using a purposive sampling technique, and the variable was the medical career choice for students in the Medical Profession Study Program, Faculty of Medicine, Tanjungpura University. The instrument was a medical career choice questionnaire prepared by the authors, reviewed by experts, and tested for validity and reliability. This study used the International Business Machines Corporation (IBM) Statistical Package for Social Sciences (SPSS) for Windows version 23.0 and Microsoft Excel 2013.^{10,11} Microsoft Excel was used to process the data using descriptive analysis.¹¹ This study was approved by the Research Ethics Committee of the Faculty of Medicine, Tanjungpura University (No.306/UN22.9/PG/2022).

Results

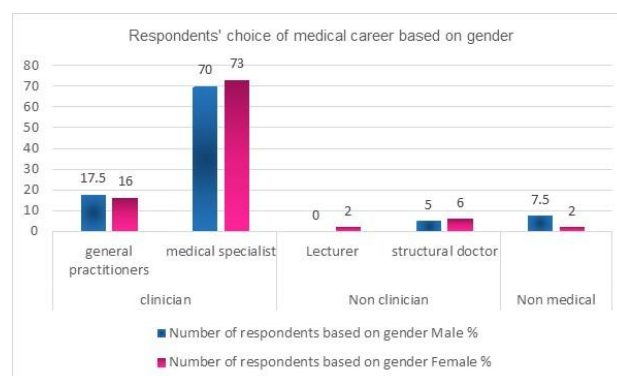
Analysis of the Characteristics of Respondents

The results of several studies regarding medical career choices in Indonesia showed that the number of female students surpasses that of male students.¹² This indicates that currently, the medical profession is dominated by females. Several other studies also stated that gender can be a consideration when choosing a career.¹³

Table 1 shows that the majority of respondents within this study were females (71%), came from Pontianak (29.70%), had parents who were both not health workers (83.30%), paid college funds independently (68.10%), had an organizational experience during their undergraduate and medical professions studies (91.3%), and had entered clinical clerkship for four semesters (50.70%). A bachelor's degree was the most common level of education for the respondents' parents, for both male (38.40%) and female parents (38.40%). The Ear, Nose, and Throat (ENT) station was the most frequent station that respondents had already passed (97.10%). Meanwhile, the surgical station was the most frequently attended station for respondents currently (16.70%).

Analysis of the Medical Career Choice

The results of several studies about career choices among medical students at various medical education institutions in Indonesia before the COVID-19 pandemic showed that the most popular career choice for students was to become clinicians, most notably specialists.^{1,12,14,15}



Source: Research data, processed
Figure 1. Diagram of medical career choices by gender

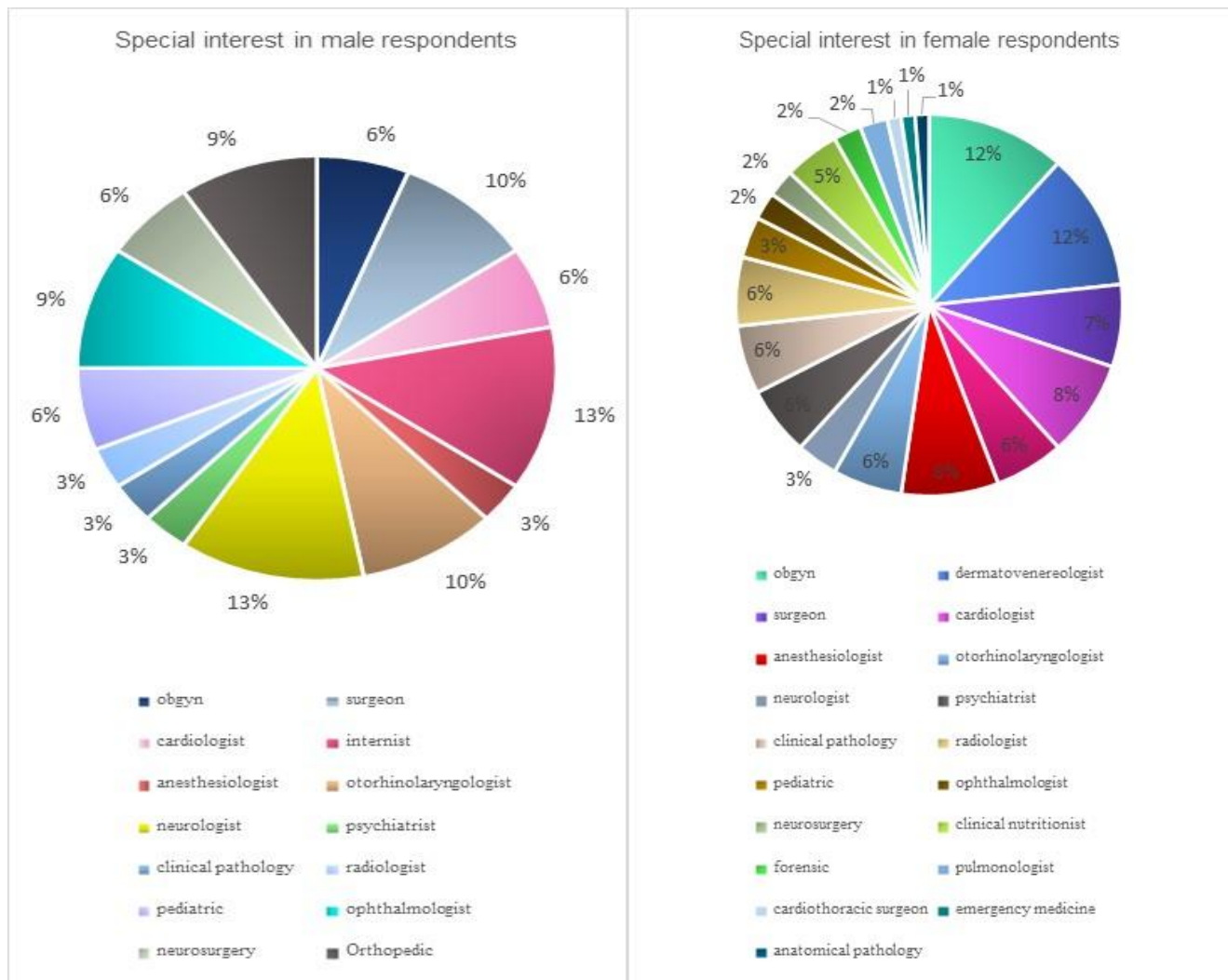
Figure 1 shows that the most popular career choice was to become a medical specialist. Other highlights include the

fact that all respondents who chose to become lecturers were females.

Table 1. Frequency distribution of the characteristics of the respondents

Variable	Category	Respondent	
		n	%
Gender	Male	40	29
	Female	98	71
Origin	Bengkayang	6	4.3
	Kapuas Hulu	8	5.8
	Ketapang	4	2.9
	Kubu Raya	6	4.3
	Landak	3	2.2
	Melawi	3	2.2
	Mempawah	13	9.4
	Sambas	5	3.6
	Sanggau	15	10.9
	Sintang	13	9.4
	Pontianak	41	29.7
	Singkawang	9	6.5
	Outside West Borneo	12	8.7
Parent's profession	Both healthcare workers	4	2.9
	One of healthcare workers	19	13.8
	Both are not healthcare workers	115	83.3
Sources of college funds	Independent	94	68.1
	Scholarship	44	31.9
Education (father)	Elementary school	5	3.6
	Junior high school	6	4.3
	Senior high school	38	27.5
	Diploma 1	1	0.7
	Diploma 2	1	0.7
	Diploma 3	3	2.2
	Bachelor	53	38.4
	Magister	27	19.6
	Doctor	4	2.9
Education (mother)	No school	1	0.7
	Elementary school	7	5.1
	Junior high school	8	5.8
	Senior high school	41	29.8
	Diploma 1	1	0.7
	Diploma 2	1	0.7
	Diploma 3	11	8
	Bachelor	53	38.4
	Magister	14	10.1
	Doctor	1	0.7
Organizational experience during undergraduate studies and the medical profession	Yes	126	91.3
	No	12	8.7
Passed stations	Forensic and medicolegal	120	87
	Pulmonology	53	38.4
	Anesthesiology	100	72.5
	Geriatric	42	30.4
	Otolaryngology-head and neck surgery	134	97.1
	Cardiology	98	71
	Ophthalmology	49	35.5
	Neurology	123	89.1
	Psychiatry	86	62.3
	Dermatology and venereology	106	76.8
	Medical emergency	30	21.7
	Pediatrics	40	29
	Internal medicine	50	36.2
	Obstetrics and gynecology	90	65.2
	Surgery	65	47.1
	Community medicine	91	65.9
	Radiology	102	73.9
Current station	Forensic and medicolegal	7	5.1
	Pulmonology	9	6.5
	Anesthesiology	4	2.9
	Geriatric	2	1.4
	Otolaryngology-head and neck surgery	4	2.9
	Cardiology	7	5.1
	Ophthalmology	9	6.5
	Neurology	3	2.2
	Psychiatry	1	0.7
	Dermatology and venereology	3	2.2
	Medical emergency	3	2.2
	Pediatrics	21	15.2
	Internal medicine	16	11.6
	Obstetrics and gynecology	17	12.3
	Surgery	23	16.7
	Community medicine	6	4.3
	Radiology	3	2.2
The length of time the respondent has entered the clinical clerkship	1 st semester	19	13.8
	2 nd semester	25	18.1
	3 rd semester	18	13
	4 th semester	70	50.7
	>4 th semester	6	4.3

Source: Research data, processed



Source: Research data, processed

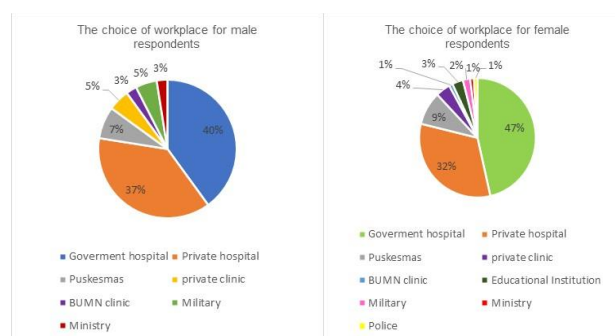
Figure 2. Diagram of specialization choices for male and female respondents

Figure 2 shows that most male respondents were interested in becoming internists (13%) and neurologists (13%). All respondents who chose the orthopedic specialist were males (9%). Most female respondents showed interest in the obstetrics and gynecology (12%) and dermatovenereologist (12%) specialists. All respondents who chose the dermatovenereologist (12%), clinical nutritionist (5%), forensic (2%), pulmonologist (2%),

cardiothoracic surgeon (1%), emergency medicine (1%), and anatomical pathology (1%) were females.

Analysis of the Workplace Choice

The workplace preferences for students can be influenced by their medical career choices. The availability of facilities that support career choices can influence their preference for a workplace choice.¹⁶



Source: Research data, processed

Figure 3. Diagram choice of the workplace for male and female respondents

Analysis of factors influencing the medical career choice

Table 2 shows that the factors that might influence career choices include personal characteristics, professional characteristics, employment conditions, personal life, clinical rotation phase, demands of postgraduate education, preclinical phase, and family roles. Based on the percentage of respondents who “agree” and “strongly agree”, the factors of personal

characteristics, professional characteristics, employment conditions, personal life, and clinical rotation phase had the biggest influence, with the percentage of answers “strongly agree” $\geq 50\%$. The demands of the postgraduate education factor had a percentage of answers “agree” $>50\%$, whilst the preclinical phase had a percentage of “agree” and “strongly agree” $>40\%$. In contrast, the family role factor has a percentage of answers “agree” and “strongly agree” $<40\%$.

Table 2. Frequency distribution of factors and subfactors influencing medical career choice

No.	Factors Influencing Career Choice	Subfactor	Inquiry Number	SD		D		A		SA	
				n	%	n	%	n	%	n	%
1.	Personal characteristics	Working style	1	0	0	6	4.3	62	44.9	70	50.7
			2	6	4.3	46	33.3	46	33.3	40	29
		Personal interest	6	0	0	6	4.3	58	42	74	53.6
			15	0	0	8	5.8	61	44.2	69	50
		Personality	3	0	0	15	10.9	62	44.9	61	44.2
		Personal experience	4	6	4.3	31	22.5	55	39.9	46	33.3
		Personal ability	5	0	0	17	12.3	72	52.2	49	35.5
		Self-satisfaction	7	0	0	4	2.9	58	42.2	76	55.1
			8	2	1.4	12	8.7	66	47.8	58	42
		Career outlook	9	7	5.1	31	22.5	54	39.1	46	33.3
			29	0	0	5	3.6	62	44.9	71	51.4
		Position in the family	10	3	2.2	25	18.1	66	47.8	58	42
		Professional activity	11	3	2.2	4	2.9	58	42	73	52.9
		Equipment used	12	2	1.4	8	5.8	67	48.6	61	44.2
2.	Professional characteristics	Professional knowledge	13	17	12.3	51	37	37	26.8	33	23.9
			14	3	2.2	5	3.6	56	40.6	74	53.6
		Career range	31	11	8	52	37.7	44	31.9	31	22.5
			32	1	0.7	7	5.1	57	41.3	73	52.9
		Working hours	16	0	0	12	8.7	49	35.5	77	55.8
		Independent practice opportunities	17	6	4.3	25	18.1	44	31.9	63	45.7
		Doctor-patient relationship	18	3	2.2	20	14.5	54	39.1	61	44.2
3.	Employment conditions	Society needed	20	0	0	8	5.8	43	31.2	87	63
		Quantity	21	3	2.2	33	23.9	55	39.9	47	34.1
		Career stability	23	0	0	7	5.1	64	46.4	67	48.6
4.	Family role	Direct choice	24	24	17.4	45	32.6	29	21	40	29
		Support choice	27	22	15.9	42	30.4	38	27.5	36	26.1
5.	Personal life	Distance of work and residence	25	14	10.1	28	20.3	41	29.7	55	39.3
6.	Demands for postgraduate education	Cost of education	33	4	2.9	9	6.5	49	35.5	76	55.1
		Education time	28	5	3.6	48	34.8	56	40.6	29	21
7.	Preclinical phase	Role model	40	3	2.2	12	8.7	75	54.3	48	34.8
		Learning materials	34	8	5.8	28	20.3	40	29	62	44.9
		Availability of career choice information	35	7	5.1	15	10.9	53	38.4	63	45.7
		Experience in clinical clerkship	38	5	3.6	15	10.9	65	47.1	53	38.4
8.	Clinical rotation phase	Career description	36	8	5.8	13	9.4	48	34.8	69	50
		Role model	37	3	2.2	14	10.1	53	38.4	68	49.3
			39	6	4.3	16	11.6	52	37.7	64	46.4

Source: Research data, processed

SD: strongly disagree; D: disagree; A: agree; SA: strongly agree

Discussion

Table 1 shows that the majority of respondents in this study were females. Similar results were also found in several studies regarding medical career choices in Indonesia.^{1,9,12,15} This shows that there are more females than males in the medical profession. Heiligers (2012) stated that gender can be a consideration for someone in their career choice.¹⁷ Male students were found to be more motivated by salary and status and attracted to careers with technical and instrumental skills and high workloads. On the other hand, females prioritize lifestyle factors, such as flexible working hours.^{8,18} In addition, Hill, *et al.* (2014) also stated that females prefer career choices requiring communication, empathy, and collaboration skills, such as pediatrics.¹⁹ Meanwhile, males tend to choose career choices that require strength, assertiveness, and independence, such as specialization in surgery.¹⁹

Figure 1 shows that the most popular career choice for students of the Medical Profession Study Program, Faculty

of Medicine, Tanjungpura University, was the career choice to become a clinician, most notably to become a specialist. The same results were obtained in several studies about career choices among medical students at various medical education institutions in Indonesia before the COVID-19 pandemic.^{1,12,14,15} Wang, *et al.* (2022) and Zhang, *et al.* (2022) stated that the high demand and shortage of clinicians during the COVID-19 pandemic caused students to be more interested in careers as clinicians rather than non-clinicians.^{20,21} This interest also rose with the increase in motivation to help others.²² The perception that the medical profession must interact directly with patients (treating patients) can be why students are more interested in being clinicians.⁹ The results of this study were similar to the study conducted by Deng, *et al.* (2021) in China, which stated that increased interest in a career as a clinician was related to students' initial motivation to enter medical education.⁷ Additionally, Wang, *et al.* (2022) stated that the COVID-19 pandemic may affect the motivation of younger students in entering medical education.²⁰ However, the

COVID-19 pandemic has caused health workers to gain immensely high workloads and an urgent need for medical personnel. A sense of responsibility and a desire to contribute to dealing with the COVID-19 pandemic is the motivation that generally underlies students to continue their medical education during the COVID-19 pandemic.²⁰ Saleh, *et al.* (2022) stated that there has been an increase in altruistic motivation in prospective medical students after the COVID-19 pandemic because medicine benefits the wider community.²² More people want to pursue medicine as it allows students to use cutting-edge medical technology, likely inspired by the use of global medical technology in diagnosing, managing, and developing a COVID-19 vaccine.²⁰

Deng, *et al.* (2021) stated that the prevalence rate of anxiety, depression, and insomnia in college students could cause a decrease in student interest in careers as clinicians.⁷ Cai, *et al.* (2021) also stated that the high rate of COVID-19 infection, death of health workers, fear of disease, and intensive work that had an impact on the psychological and mental of health workers caused a decline in student interest to become clinicians.²³

Figure 1 shows that all respondents who chose to become lecturers were females. This study aligns well with the study conducted by Rustam, *et al.* (2021), which stated that there is a significant relationship between gender and medical career choice.¹² Social aspects and perspectives of suitability between specific career fields for certain genders can lead to differences in career choice interests between males and females. Females are highly considerate of their time at work and tend to choose more service-oriented professions that offer high intrinsic and social rewards, such as being able to help others. Meanwhile, males prefer a career that emphasizes leadership and instrumentality, offers high extrinsic rewards (salary, career, and prestige), and are more interested in technical challenges.^{24,25} However, these results do not align well with the study conducted by Andarwati, *et al.* (2016), which reported no relationship between gender and career choices.⁹

Figure 2 shows that most female respondents chose the specializations of obstetrics and gynecology and dermatovenereology. A study before the COVID-19 pandemic stated that females' high interest in these careers was associated with their reproductive gender roles.¹⁷ Religious and socio-cultural factors may also influence medical career choices. Therefore, in Muslim countries, most students interested in pursuing a career as obstetrics and gynecology specialists are females.²⁶ Similar results were found in a study in Japan, which reported that 66.2% of obstetrics and gynecology specialists were females.²⁷ Social norms and policies, gender discrimination regarding career choices, discrimination, and sexual harassment in the workplace, high levels of stress regarding family responsibilities, and lack of support regarding pregnancy and child care at work are considered to influence career choices as an obstetrics and gynecology specialist. For students who are not yet married or have children, the proportion of obstetrics and gynecology interest in female respondents was higher than in male respondents.²⁷ The

increasing interest of female students in having a career as an obstetrics and gynecology specialist is in line with the increasing demand for female patients seeking treatment or consultations with a female doctor specializing in obstetrics and gynecology. A study by Ramakrishnan, *et al.* (2014) revealed that cases of sexual violence and/or harassment are the reason female patients are more comfortable in seeking treatment from a female obstetrics and gynecology specialist.²⁷

The policy of enforcing large-scale social restrictions (PSBB) during the COVID-19 pandemic, which created economic pressure and limited space for individual social movement, contributed to an increase in the number of sexual violence cases in Indonesia. This is further proven by data retrieved from the Online Information System for the Protection of Women and Children (Simfoni PPA) published by the Ministry for the Protection of Women and Children, where they reported that throughout January-July 2020, there were 1,848 cases of sexual violence against children.²⁸ The implementation of the PSBB policy by the Indonesian government has limited social interaction between people, resulting in increased boredom, depression, despair, and anger at the individual level. As a result, anger is often vented towards people around them, which usually include females.²⁸

Figure 2 shows that the majority of male respondents chose the internist and neurologist specialists. Saleh, *et al.* (2022) stated that during the COVID-19 pandemic, there was an increase in student interest as an internist or its subspecialties.²² It could be because internists were needed to handle COVID-19. Other notable results include the increasing interest in emergency medicine, pediatrics, and radiology. Emergency medicine is at the forefront of handling COVID-19, while pediatricians are in charge of dealing with COVID-19 in children. On the other hand, increased interest in radiology is associated with fewer patient interactions, reducing the possibility of exposure to infectious diseases.²² All respondents who chose orthopedics were males, and these results align well with a study by Zia, *et al.* (2017), which reported a higher demand for career specialization in orthopedics among male respondents.²⁹ Prestige in society and the characteristics of the orthopedic profession, which tend to be considered a male profession, are the reasons male respondents choose this career.²⁹

Figure 3 shows that most of the respondents chose to work in a hospital. Assefa, *et al.* (2017) stated that most students would want to work in large hospitals and city centers because they want to choose a place with better work environments.³⁰ In addition, the medical education curriculum has a limited role in preparing students to serve in more rural areas.³⁰ The respondents' preferred career choices may also influence the choice of workplace. The availability of facilities that support career choices is a crucial factor when choosing a preferred workplace.¹⁶

Personal characteristics, namely personal interest, are one of the most influential factors when deciding the respondents' career choice, which aligns well with the results of several studies.^{9,24} Syakurah, *et al.* (2020) stated that the personal interest of medical students in choosing a

career is influenced by their personal lifestyle, intrinsic motivation, and plans.⁸ Position in the family factor can be influenced by various conditions, one of which is change and transition between life stages, such as marriage or becoming parents, which can impact career choices for the future. Responsibilities when becoming a husband or wife or becoming parents to students who are married can influence their career choices.¹⁷ The society needed factor is one of the factors that most influenced the respondents' career choices. According to Hayes, *et al.* (2013), the community's need for a profession is a significant factor in a person's career choice considerations.³¹ The experience factor in clinical clerkship is the most influential in the clinical rotation phase. It is similar to several studies that stated that the knowledge gained while undergoing education in the clinical rotation phase may influence the choice of a medical career.^{2,14}

This study shows that role models in the clinical rotation phase had more influence on respondents' career choices than the role models in the preclinical phase.³² To be considered a role model by students, an extraordinary level of clinical knowledge, skills, and a patient-centered approach are required.³³ Other factors that may also influence career choices in the preclinical phase include curriculum. Understanding medical student career preferences and interests for their career after graduation is crucial for designing an appropriate medical school curriculum.³⁰ Riedel, *et al.* (2022) stated that with limitations in learning during the COVID-19 pandemic, it is essential that educational institutions implement an appropriate curriculum for their students.³⁴

The family role factor had the lowest percentage of "agree" and "strongly agree" answers among the factors that influenced career choices. Maulidira, *et al.* (2015) stated that the role of the family is one of the reasons respondents chose the medical career, including parents directing career choices or the desire to follow in the footsteps of their families who have careers in that field.³⁵ Family involvement through support and guidance can aid in planning future careers and boost self-confidence in choosing the right career.³⁶

Conducting further research to determine factors that influence the choice of a medical career by using mixed-method research or qualitative interviewing is recommended. In addition, medical education institutions should develop more in-depth medical education curricula to increase students' interest in several fields of medical careers that they lack interest in and provide counseling regarding descriptions and information on medical career choices.

Strength and Limitations

The strength of this study was its detailed description of medical career and workplace choices, along with the factors that influence the career choice of respondents during the COVID-19 pandemic. The majority of respondents were students who had undergone clinical clerkship for four semesters, ensuring their experience of clinical clerkship during the COVID-19 pandemic. The

limitation of this study was that respondents were only allowed to choose one medical career option that they were most interested in. Therefore, the results obtained did not represent the respondent's medical career choices. Hence, further studies are needed to learn more about the factors that influence the choice of a medical career, either with mixed-method research or qualitative interviewing.

Conclusion

The highest number of respondents in this study were female students who came from Pontianak, paid tuition fees independently, had organizational experience while pursuing undergraduate studies and the doctor profession, and had both parents who are non-healthcare workers. The most common educational backgrounds were bachelor's degrees. The stages that had been completed include the stage of ENT, while the current stage respondents were undergoing surgery. Most respondents had undergone education in a clinical clerkship for four semesters. The most popular medical career choices and institutions were specialists in obstetrics and gynecology and working in hospitals. Factors that influenced the choice of a medical career were personal and professional characteristics, employment conditions, personal life, preclinical phases and clinic rotations, demands for further education, and family roles.

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Conflict of Interest

The authors declared there is no conflict of interest.

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Ethical Clearance

This research was approved by the Research Ethics Committee of the Faculty of Medicine, Tanjungpura University (No.306/UN22.9/PG/2022) on 27-04-2022.

Authors' Contributions

Designed the study: ZN, IF, and SEP. Collected data, designed the manuscript, and performed a statistical

analysis: ZN. Supervised the results and discussions: IF and SEP. All authors reviewed and approved the final version of the manuscript.

References

1. Syakurah RA, Sari DA, Riansyah D, Yolanda P. Determinan Pilihan Karir Mahasiswa Fakultas Kedokteran sebagai Spesialis di Indonesia. *J Pendidik Kedokt Indones* 2014; 3: 132–136. [Journal]
2. Gustiani S. Students' Motivation in Online Learning during COVID-19 Pandemic Era: A Case Study. *Holistics (Hospitality Linguist J Ilm Bhs Ingg* 2020; 12: 23-40. [Journal]
3. Hassan M, Shahzad F, Waqar SH. Seeking Motivation for Selecting Medical Profession as a Career Choice. *Pakistan J Med Sci* 2020; 36: 941–945. [PubMed]
4. Györfi Z, Birkás E, Sándor I. Career Motivation and Burnout among Medical Students in Hungary - Could Altruism be a Protection Factor? *BMC Med Educ* 2016; 16: 182. [Journal]
5. Pesulima TL, Hetharie Y. Perlindungan Hukum terhadap Keselamatan Kerja Bagi Tenaga Kesehatan Akibat Pandemi COVID-19. *SASI* 2020; 26: 280–285. [Journal]
6. Kelly EL, Casola AR, Smith K, Kelly S, de la Cruz MSD. A Qualitative Analysis of Third-Year Medical Students' Reflection Essays Regarding the Impact of COVID-19 on Their Education. *BMC Med Educ* 2021; 21: 481. [PubMed]
7. Deng J, Que J, Wu S, Zhang Y, Liu J, Chen S, et al. Effects of COVID-19 on Career and Specialty Choices among Chinese Medical Students. *Med Educ Online* 2021; 26: 1913785. [PubMed]
8. Rosyila, Syakurah R. Medical Student Career Choice's Determinants in Asia: A Systematic Review. *Int J Public Heal Sci* 2020; 9: 57–61. [Journal]
9. Andarwati P, Nuraini S, Nugroho A. Motivasi dan Pilihan Karir Mahasiswa Tingkat Akhir Fakultas Kedokteran Universitas Airlangga, Surabaya. *Bul Penelit Sist Kesehat*; 19. 27 January 2017. [ResearchGate]
10. Nie NH, Bent DH, Hull CH. Statistical Package for the Social Sciences (SPSS), (2015). [Website]
11. Gates B, Allen P. Excel, (2013). [Website]
12. Rustam IY, Saputra M, Handayani Y, et al. Analisis Determinan Pilihan Karir Dokter Internsip di Provinsi DKI Jakarta. *J Indones Med Assoc* 2020; 70: 246–252. [Journal]
13. Aisha N, Ameen N, Jassim G. Career Choices among Medical Students and Factors Influencing Their Choices. *Glob J Health Sci* 2019; 11: 132. [Journal]
14. Mardhiyah I, Saputra O, Larasati T, Lisiswanti R. Studi Kualitatif Faktor-Faktor yang Mempengaruhi Pemilihan Karier pada Mahasiswa Kedokteran dan Dokter Internship di Bandar Lampung. *J Kedokt Univ Lampung (JK Unila)* 2016; 1: 272–282. [Journal]
15. Nurhayati E, Respati T, Piliang B. Pilihan Karir Lulusan Program Pendidikan Profesi Dokter Universitas Islam Bandung Tahun 2015. *Glob Med Heal Commun* 2016; 4: 87–92. [Journal]
16. Okunlola AI, Babalola OF, Okunlola CK, et al. Determining Factors for the Choice of Medical Career among the Final Year Medical Students of a Private University in Nigeria. *Niger J Med*; 29, (2020). [Journal]
17. Heiligers PJM. Gender Differences in Medical Students' Motives and Career Choice. *BMC Med Educ* 2012; 12: 82. [PubMed]
18. Yang G, Wang L, Wang J, Geng Z, Liu H, Xu T. Career Choice Regret during COVID-19 among Healthcare Students and Professionals in Mainland China: A Cross-Sectional Study. *BMC Med Educ* 2021; 21: 534. [Journal]
19. Hill EJR, Giles JA. Career Decisions and Gender: The Illusion of Choice? *Perspect Med Educ* 2014; 3: 151–154. [PubMed]
20. Wang XL, Liu MX, Peng S, Yang L, Lu C, Shou SC, et al. Impact of the COVID-19 Pandemic on Career Intention amongst Undergraduate Medical Students: A Single-Centre Cross-Sectional Study Conducted in Hubei Province. *BMC Med Educ* 2022; 22: 154. [PubMed]
21. Zhang R, Pei J, Wang Y, Wang L, Yeerjiang Y, Gao H, et al. COVID-19 Outbreak Improves Attractiveness of Medical Careers in Chinese Senior High School Students. *BMC Med Educ* 2022; 22: 241. [Journal]
22. Saleh R, Martins RS, Saad M, Fatimi AS, Kumar G, Abbas M, et al. The Impact of the COVID-19 Pandemic on the Career Choice of Medicine: A Cross-Sectional Study amongst Pre-Medical Students in Pakistan. *Ann Med Surg* 2022; 81: 104219. [PubMed]
23. Cai CZ, Lin Y, Alias H, Hu Z, Wong LP. Effect of the COVID-19 Pandemic on Medical Student Career Perceptions: Perspectives from Medical Students in China. *Int J Environ Res Public Health*; 18. May 2021. [PubMed]
24. Levaillant M, Levaillant L, Lerolle N, Vallet B, Hamel-Broza JFpi. Factors Influencing Medical Students' Choice of Specialization: A Gender Based Systematic Review. *EClinicalMedicine* 2020; 28: 100589. [PubMed]
25. Ku M. When Does Gender Matter? *Work Occup* 2011; 38: 221–262. [Journal]
26. McLean M, Al Ahbabi S, Al Ameri M, Al Mansoori M, Al Yahyaie F, Bernsen R. Muslim Women and Medical Students in the Clinical Encounter. *Med Educ* 2010; 44: 306–315. [PubMed]
27. Ramakrishnan A, Sambuco D, Jaggi R. Women's Participation in the Medical Profession: Insights from Experiences in Japan, Scandinavia, Russia, and Eastern Europe. *J Womens Health (Larchmt)* 2014; 23: 927–934. [PubMed]
28. Aristi N, Janitra P, Prihandini P. Fokus Narasi Kekerasan Seksual pada Portal Berita Daring Selama Pandemi COVID-19. *J Kaji Komun* 2021; 9: 121. [Journal]
29. Zia S, Abbas M, Sulaiman M, Sheikh SM. Career Choices of Medical Doctors at Graduate Level - A Multicenter Study. *Pakistan J Med Sci* 2017; 33: 1086–1090. [Journal]
30. Assefa T, Mariam DH, Mekonnen W, Derbew M. Medical Students' Career Choices, Preference for Placement, and Attitudes towards the Role of Medical Instruction in Ethiopia. *BMC Med Educ* 2017; 17: 96. [PubMed]
31. Hayes BW, Shakya R. Career Choices and What Influences Nepali Medical Students and Young Doctors: A Cross-Sectional Study. *Hum Resour Health* 2013; 11: 5. [Journal]
32. Aslam F, Jawad U, Hotiana U, Mahboob U. Medical Students' Perspective about Attributes of Role Models - The Other Side of Story. *J Evol Med Dent Sci* 2021; 10: 1692–1697. [ResearchGate]
33. Burgess A, Goulston K, Oates K. Role Modelling of Clinical Tutors: A Focus Group Study among Medical Students. *BMC Med Educ* 2015; 15: 17. [Journal]

34. Riedel M, Amann N, Recker F, Hennigs A, Heublein S, Meyer B, *et al.* The COVID-19 Pandemic and Its Impact on Medical Teaching in Obstetrics and Gynecology-A Nationwide Expert Survey among Teaching Coordinators at German University Hospitals. *PLoS One* 2022; 17: e0269562. [[Journal](#)]
35. Maulidira F, Syakurah R, Fadilah M, Aulia H. Pengaruh Role Model terhadap Pilihan Karir pada Mahasiswa Fakultas Kedokteran. *J Pendidik Kedokt Indones* 2015; 4: 75–82. [[Journal](#)]
36. Rukmini E, Bogar KJ. Exploratory Study on Medical Graduates with Nonclinicians Career. *J Pendidik Kedokt Indones Indones J Med Educ* 2021; 10: 86–98. [[Journal](#)]