# RESEARCH

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# Specialty preferences among Nigerian medical students: a cross sectional study



Tobi Olajide<sup>1,2,3\*</sup>, Chioma Ezebialu<sup>1,2,3,12</sup>, Christabel Uche-Orji<sup>1,2,3</sup>, Ridwanullah Abdullateef<sup>1,2,3</sup>, Chisom Okoye<sup>1,2,3,12</sup>, Esther Olaoye<sup>1,2</sup>, Jolly Thomas<sup>1,2,4</sup>, Joy Adeniyi<sup>1,7</sup>, Angel Ogiemudia<sup>1,13</sup>, Simon Aina<sup>1,5</sup>, Oluwatimilehin Oladapo<sup>1,2,3</sup>, Emmanuel Ibitunde<sup>1,2</sup>, Olumide Bankole<sup>1,15</sup>, Chukwuebuka Asogwa<sup>1,2,3</sup>, Mafusat Ojewumi<sup>1,2</sup>, Precious Wagwula<sup>1,17,18</sup>, Ayomide Fatola<sup>1,2,3</sup>, Oluwadabira Adewara<sup>1,2,3</sup>, Kenneth Christian<sup>1,11</sup>, Oghenemaro Jerry-Ogeme<sup>1,2</sup>, Lawrence Rejoice<sup>1,9</sup>, Chisom Obah<sup>1,2</sup>, Nouh Sanusi<sup>1,2</sup>, Joshua Alabi<sup>1,2,12</sup>, Elizabeth Ayegboyin<sup>1,2</sup>, Atoyebi Olaadura<sup>1,6</sup>, Isaac Adejumo<sup>1,2</sup>, Promise Enyesiobi<sup>1,9</sup>, Peace Alemede<sup>1,8</sup>, David Uzoechi<sup>1,10</sup>, Abdulaziz Ahmad<sup>1,8</sup>, Chimdalu Ezeani<sup>1,9</sup>, Brian Uche-Orji<sup>11</sup>, Oluwatobi Joshua<sup>1,16</sup>, Ihunanyachi Agha-Okoro<sup>1,19</sup>, Godson Omumuawuike<sup>14</sup>, Jessica Gambo<sup>1,5</sup>, Peace Gbenle<sup>1,2</sup>, Evan Adetoye<sup>15</sup>, Olamide Odusola<sup>1,2,3</sup>, Muhammed Ya'u<sup>21</sup>, Muhammad Karaye<sup>20</sup> and Rufus Akinyemi<sup>2,3</sup>

# Abstract

**Introduction** Specialty preferences among medical students significantly influence healthcare workforce distribution and equity. Nigeria, with its low physician-to-patient ratio, faces critical challenges in addressing healthcare demands. Understanding the specialty preferences of medical students and the factors influencing these choices is essential for workforce planning. This study aimed to investigate these preferences among Nigerian medical students and the implications for healthcare planning.

**Methods** A cross-sectional study was conducted using convenience sampling among 439 penultimate and finalyear medical students across fully accredited Nigerian medical schools between July and October 2024. Data were collected using an online self-administered questionnaire, which included socio-demographics, specialty preferences, and influencing factors. Analysis was performed using the Statistical Product and Service Solutions (SPSS) version 27. Descriptive and inferential statistics were used to summarize categorical variables as frequencies and proportions, while continuous variables were reported as means and standard deviations. Ethical approval was obtained from the University of Ibadan/University College Hospital (UI/UCH) Health Research Ethics Committee.

**Results** The mean age of participants was  $23.62 \pm 2.95$  years, with 53.1% male and 45.3% female. Most students were in their penultimate year (60.1%). Obstetrics and Gynecology was the most preferred first-choice specialty (14.7%), followed by Cardiothoracic Surgery (11.8%). A significant proportion of students were undecided (13.3%) about their first choice. Diagnostic specialties like Radiology and Pathology had the least interest (< 1%). Significant factors influencing specialty choice included personal interest (87%), content of specialty (85.3%), and potential lucrativeness (77%). Statistically significant associations were observed for potentially lucrativeness (p < 0.001), the desired practice setting

\*Correspondence: Tobi Olajide tobiolajide2000@gmail.com Full list of author information is available at the end of the article



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(p = 0.004), shorter training periods (p < 0.001), minimal or predictable work hours (p < 0.001), age (p = 0.003), and academic level (p = 0.034).

**Conclusion** This study explored specialty preferences among Nigerian medical students revealing a strong inclination toward Obstetrics and Gynecology, Surgery, and Internal Medicine. Career choices were influenced by factors such as personal interest, prestige, intellectual challenge, income, academic level, and gender. The study revealed the need for structured career counseling and increased exposure to underrepresented specialties to address the uneven distribution of specialists in Nigeria. Tailored mentorship programs, improved financial incentives, and enhanced training opportunities are critical for optimizing the healthcare workforce and achieving equity.

Keywords Specialty preferences, Medical students, Nigeria

# Introduction

The selection of a medical specialty is a critical milestone in the journey of medical students, shaping their professional identity and career trajectory. Beyond the individual, these decisions profoundly impact the structure and efficiency of healthcare systems by influencing the distribution of specialists and addressing—or exacerbating—gaps in healthcare delivery [1]. Globally, understanding the factors that guide medical students' specialty preferences has garnered significant attention, as these choices have direct implications for healthcare accessibility, quality, and equity [2, 3].

In resource-limited settings like Nigeria, the importance of optimizing the healthcare workforce cannot be overstated. Nigeria, the most populous nation in Africa, grapples with a physician-to-patient ratio of 1:9083, far below the World Health Organization's (WHO) recommended standard of 1:600 [4]. Addressing these disparities requires a comprehensive understanding of the factors influencing the specialty preferences of the next generation of healthcare providers.

Existing research highlights that medical specialty preferences are shaped by a combination of intrinsic and extrinsic factors. These include personal interest, perceived prestige, financial incentives, mentorship, work-life balance, and exposure during clinical rotations. Studies conducted in Jordan, Japan, Uganda, and Botswana have shown the influence of lifestyle considerations and clinical experiences in shaping specialty choices [5–8]. However, fields deemed less prestigious or financially rewarding often receive limited interest due to inadequate exposure and career opportunities [9, 10].

Despite these global insights data on the specialty preferences of Nigerian medical students remain limited. While previous studies from South-Eastern and North-Central Nigeria have identified a strong preference for surgical specialties, potential regional and institutional differences in preferences have been under-investigated [11]. Furthermore, as medical education in Nigeria evolves to address local healthcare needs, understanding how final-year medical students make their specialty choices is critical for policy and curriculum development.

This study focuses on penultimate and final-year medical students who, having completed significant portions of their training, provide a robust representation of contemporary preferences. By employing a cross-sectional design, this research aims to identify the specialty preferences of Nigerian medical students, the factors influencing these choices, and their implications for healthcare workforce planning. The findings will serve as a foundation for targeted interventions, such as mentorship programs, enhanced clinical exposure, and policy reforms, to balance the distribution of specialists and improve healthcare delivery across the nation.

## Methods

This cross-sectional study was conducted to investigate the specialty preferences of Nigerian medical students. The study was carried out within medical schools across Nigeria, targeting penultimate and final-year medical students via convenience sampling technique. Of the accredited medical schools, 5 were privately owned, while 30 were public universities. Data collection took place between July and October 2024 using a structured online questionnaire designed in English, the primary language of instruction at the participating institutions. This questionnaire was adapted from Ezegwui et al. [12]. All authors (except the supervisor of this study) were assigned to share the survey to their respective medical students' associations. The study population included Nigerian medical students currently enrolled in medical programs. The inclusion criteria were students in their penultimate and final years, as they were deemed to have had sufficient exposure to medical specialties. Participation was limited to students who consented, could understand and respond adequately to the survey, and were actively enrolled in accredited medical schools. Foreign students studying in Nigeria, students who had temporarily suspended their studies or were not actively enrolled at the time of the study, those with diagnosed mental health challenges, and those who had challenges

comprehending the survey were excluded from the study. The sample size for the study was calculated using the Qualtrics sample size calculator. With a confidence level of 95%, a margin of error of 3%, and an estimated population size of 7727 (3933 in the penultimate year and 3794 in the final year), the required sample size was determined to be 926 participants. The questionnaire was hosted on Qualtrics and structured into five sections. The first section gathered socio-demographic information, while the second explored students' course choices and prior exposure to career counseling. The third section focused on specialty preferences, asking students to rank specialties in order of preference while providing options for undecided students or those considering non-specialization. The fourth section assessed factors influencing specialty choices, allowing participants to rate the importance of various reasons. Finally, the fifth section sought participants' suggestions for improving the medical curriculum. Recruitment was facilitated through university email addresses and WhatsApp.Data analysis was performed using SPSS version 27. Descriptive and inferential statistics were used to summarize categorical variables as frequencies and proportions, while continuous variables were reported as means and standard deviations. The Chi-square test was employed to identify relationships between sociodemographic factors and specialty preferences, with statistical significance set at p < 0.05. Ethical considerations were addressed. The study was approved by the Institutional Review Board of the UI/UCH Health Research Ethics Committee with an assigned number UI/EC/24/0701. Informed consent was obtained from all participants before they completed the survey. The study's objectives were explained, and participants were assured of the voluntary nature of their involvement, with the freedom to withdraw at any point. Measures were taken to ensure confidentiality, as no personal data were collected, and responses were anonymized. The study posed no foreseeable risks to participants, apart from the time spent completing the questionnaire. No financial or material compensation was provided for participation. The research team declared no conflicts of interest.

#### Results

## Sociodemographics

A total of 520 medical students from various universities across Nigeria participated in the study (response rate of 56.2%). However, upon data cleaning, only 439 responses were used for data analysis. The mean age of the participants was 23.62  $\pm$ 2.95 years, with the majority (78.6%) aged between 20 and 25 years. Only a small proportion (1.2%) of participants were older than 30 years. Of the respondents, 233 (53.1%) were male, while 199 (45.3%) were female. A certain number identified as non-binary or preferred not to disclose their gender. Most participants (60.1%) were in their penultimate year of medical school, and the remaining 39.9% were final-year students (Table 1).

As shown in Table 1, the geographical distribution of participants showed that most were from southwestern Nigeria (211, 48.1%), while the least represented region was northwestern Nigeria (11, 2.5%).

As shown in Table 2, in terms of family background, 137 (31.2%) participants reported having a doctor in their family, with relationships mostly in the extended family. Regarding parental education, a majority of fathers (80.7%) and mothers (78.2%) of the participants had attained tertiary education. Career counselling before choosing medicine was uncommon, with 303 (70.1%) of respondents reporting they had not received any form of guidance before entering medical school. Despite this, 260 (60.2%) reported that they had always wanted to study medicine and 339 (77%) indicated that medicine was their first choice of career.

#### Choice of specialty

Core surgical specialties were the most preferred firstchoice specialty (40.7%), with Obstetrics and gynaecology emerging as the second most preferred first-choice specialty (14.7%). As the ranking of specialty preferences progressed from the first to the third choice, the

Table 1	Socio-demographic	characteristics	of study	participants
(n = 439)	)			

Variable	n (%)
Age (in years)	
< 20	20 (4.6)
20–25	341 (78.6)
26–30	68 (15.7)
> 30	5 (1.2)
Gender	
Male	223 (53.1)
Female	199 (45.3)
Prefer not to say	6 (1.4)
Non-binary/Third gender	1 (0.2)
Level	
Penultimate year	264 (60.1)
Final year	175 (39.9)
Region	
South-West	211 (48.1)
South-South	80 (18.2)
South-East	56 (12.8)
North Central	46 (10.5)
North-East	35 (8.0)
North-West	11 (2.5)

Table 2	Background	of study	participants	(n = 439)
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Variable	n (%)
Do you have a doctor in your family?	
Yes	137 (31.2)
No	302 (68.8)
What is the relationship to the doctor?	
Nuclear family	65 (46.8)
Extended family	74 (53.2)
Father's level of education	
No formal education	7 (1.6)
Primary	29 (6.7)
Secondary	48 (11.0)
Tertiary	352 (80.7)
Mother's level of education	
No formal education	11 (2.5)
Primary	16 (3.7)
Secondary	68 (15.6)
Tertiary	341 (78.2)
Did you receive career counselling before cho	oosing medicine?
Yes	129 (29.9)
No	303 (70.1)
Did you always want to study medicine?	
Yes	260 (60.2)
Maybe	87 (20.1)
No	85 (19.7)

Table 3 Preferred core specialty choices of medical students

S/N <sup>a</sup>	Specialty	First choice (%)	Second choice (%)	Third choice (%)
1	Surgery	40.7	32.3	10.3
2	Obstetrics and gynae- cology	14.7	14.2	25.1
3	Internal Medicine	11.6	17.1	12.8
4	Psychiatry	5.0	4.0	4.5
5	Paediatrics	4.7	5.7	5.0
6	Community medicine	4.3	6.4	5.7
7	Pathology	0.9	0.7	3.3
7	Radiology	0.9	3.0	4.0

<sup>a</sup> Rank order of preferred first specialty choices

proportion of undecided students increased noticeably (Table 3). Further analyses on sub-specialties have been reported in Table 4a and b.

#### Factors affecting specialty choice

As shown in Table 5a and b, the most influential factors affecting the choice of specialty were personal interest (87%), the content of the specialty (85.3%), the desired

practice setting (80.8%), and potential lucrativeness (77%). Other notable factors included the inspiration and guidance from God (71.2%), clinical rotations in the specialty's department (70.0%), and predictable work hours (68.8%). Parental influence and the burden of disease in Nigeria were less frequently reported as important factors, with only 47.1% and 43.5% of participants, respectively, identifying them as impactful. The relationship between factors like desired practice setting and specialty choice was statistically significant (p = 0.004), as were factors such as potential lucrativeness (p<0.001), shorter training periods (p < 0.001) and minimal or predictable work hours (p < 0.001).

Among surveyed medical students (Table 6), Obstetrics and Gynaecology had balanced interest across penultimate (10.6%) and final years (18.9%), with more females (55.7%) interested. However, 65.6% hadn't received career counseling, and 45.9% had a doctor in the family. Cardiothoracic Surgery and Neurosurgery were mostly chosen in the penultimate year and showed strong male dominance (85.7% and 79.1%, respectively). Most students selecting these specialties lacked career counseling (77.6% and 65.5%) and a medical family background. General Surgery was also more popular in the penultimate year, with a relatively balanced gender distribution (56.3% male, 43.7% female). Psychiatry showed nearequal gender interest and was slightly more popular in the final year. Notably, 59.1% of students interested in Psychiatry had a doctor in the family, contrasting with the surgical specialties.

On testing for associations between sociodemographic characteristics and first-choice specialties (Table 7), gender (p = 0.003) and academic level (p = 0.034) were found to be significantly associated with students' preferred specialties. In contrast, career counseling (p = 0.801), having doctors in the family (p = 0.263), and region (p = 0.333) showed no significant associations with specialty choice.

Participants provided several recommendations to improve the medical training curriculum. Key suggestions included introducing more elective rotations, creating specialized tracks, enhancing mentorship opportunities, and increasing research exposure for students. These changes were seen as critical to better preparing medical students for their future careers (Table 8).

#### **Regional differences in specialty preferences**

The analysis of specialty preferences across six regions revealed distinct patterns in medical career aspirations (Fig. 1). In the South-West, Obstetrics and Gynecology emerged as the top choice, accounting for 13.9% of preferences, followed by Cardiothoracic Surgery at 12.9%, and"Yet to Decide"at 10.4%. Similarly, in the

а				
S/N <sup>a</sup>	Specialty	First choice (%)	Second choice (%)	Third choice (%)
1	Obstetrics and gynecology	14.7	9.0	5.9
2	Yet to decide	13.3	14.2	25.1
3	Cardiothoracic surgery	11.8	6.4	3.6
4	Neurosurgery	7.1	4.3	3.6
5	General surgery	6.6	7.1	4.5
6	Psychiatry	5.0	4.0	4.5
7	Pediatrics	4.7	5.7	5.0
7	Orthopaedic surgery	4.7	2.6	3.3
9	Public health/community medicine	4.3	6.4	5.7
10	Anesthesiology	3.6	3.8	5.0
11	Pediatric surgery	2.8	4.5	2.4
12	Plastic surgery	2.6	1.9	1.7
13	Cardiology	2.4	4.7	6.4
13	Neurology	2.4	2.1	1.4
b				
S/N <sup>a</sup>	Specialty	First choice (%)	Second choice (%)	Third choice (%)
15	Family medicine	2.1	5.9	-
16	Ophthalmology	1.9	3.3	3.1
16	Sports medicine	1.9	-	-
18	Urology	1.7	1.7	2.1
19	Radiology	0.9	2.8	3.3
19	Pathology	0.9	0.7	3.3
19	Nephrology	0.9	1.9	1.7
22	Gastroenterology	0.7	1.4	0.7
22	Pulmonology	0.7	0.2	0.9
24	Ear, nose, and throat	0.5	1.9	0.2
24	Infectious disease	0.5	0.9	2.6
26	Clinical pharmacology	-	0.7	0.2
26	Radiotherapy	-	0.2	0.9
28	Rheumatology	-	0.2	0.7

<sup>a</sup> Rank order of preferred first specialty choices

South-East, Obstetrics and Gynecology led with 23.6%, while 10.9% of respondents were undecided, and Cardiothoracic Surgery followed with 7.3%. In the South-South region, 24.4% of participants were undecided about their speciality, while Obstetrics and Gynecology and Cardiothoracic Surgery both recorded 12.8%. In North-Central, Obstetrics and Gynecology was the top choice at 15.9%, followed closely by Cardiothoracic Surgery at 13.6%. Psychiatry and Plastic Surgery are tied as the third most preferred specialties, each accounting for 9.1%. In the North-East majority picked"Yet to Decide,"which accounted for 18.8%, followed by Neurosurgery at 15.6%, and Obstetrics and Gynecology at 9.4%. Finally, in the North-West, those who chose Urology and those who were yet to decide were equally similar at 18.2% each, with Obstetrics and Gynecology at 9.1%.

### Discussion

Medical specialty preference is a critical area of study in medical education, especially in countries like Nigeria, where healthcare resources and personnel are often limited. Therefore, gaining insights into the specialty preferences of Nigerian medical students is crucial for effective workforce planning, healthcare policy formulation, and overall healthcare system improvement in the country.

Our study indicates that approximately 1 in 3 of surveyed Nigerian medical students received career counseling before choosing medicine, leaving the majority

#### **Table 5** Factors affecting first choice of specialty (n = 416)

a				
	Frequency			
Factors	Important n (%)	Neutral n (%)	Not important n (%)	<i>P-</i> value*
Personal interest	362 (87.0)	47 (11.3)	7 (1.7)	0.424
A well revered model	188 (45.2)	163 (39.2)	65 (15.6)	0.227
Clinical rotation in the department	287 (70.0)	95 (22.8)	34 (8.2)	0.294
Intellectually demanding	240 (57.7)	141 (33.9)	35 (8.4)	0.080
Potentially lucrative	320 (77.0)	75 (18.0)	21 (5.0)	< 0.001
Content of specialty	355 (85.3)	52 (12.5)	9 (2.2)	0.085
Desired practice setting	336 (80.8)	69 (16.6)	11 (2.6)	0.004
b				
	Frequency			
Factors	Important n (%)	Neutral n (%)	Not important n (%)	P-value
Minimal/predictable work hours	286 (68.8)	101 (24.3)	29 (7.0)	< 0.001
Parental influence	196 (47.1)	135 (32.5)	85 (20.4)	0.815
Burden of disease in Nigeria	181 (43.5)	144 (34.6)	91 (21.9)	0.115
Few specialists in the country	175 (42.1)	150 (36.1)	91 (21.9)	0.605
Working with new technology	252 (60.6)	121 (29.1)	43 (10.3)	0.620
Opportunity for research	264 (63.5)	112 (26.9)	40 (9.6)	0.126
Shorter training periods	181 (43.5)	163 (39.2)	72 (17.3)	< 0.001
Perceived ease of training/practice	217 (52.2)	130 (31.3)	69 (16.6)	< 0.001
Prestige of specialty	212 (51.0)	154 (37.0)	50 (12.0)	0.155
Inspiration and guidance from God	296 (71.2)	89 (21.4)	31 (7.5)	0.557

\* Chi-square association between first choice specialty and factors affecting these choices

(70.1%) without structured guidance during their formative years. This is consistent with a study done among Ibadan final year medical students that showed that 27.1% did not get any form of career counselling prior to medical school [12]. This lack of career counseling highlights a critical gap in Nigeria's educational system, particularly at the secondary school level, where students typically make pivotal career decisions [13, 14]. Factors contributing to this gap include inadequate resources, a lack of trained personnel, and limited access to counselors specializing in healthcare [15]. Consequently, many students enrol into medical school without a clear cut understanding of the profession, which may lead to dissatisfaction or burnout later in their careers. Despite the limited guidance, the majority of respondents reported that medicine was their initial career interest, indicating intrinsic motivation for pursuing the profession. This suggests that, for some students, medicine was a pragmatic choice influenced by factors such as job security or parental expectations as seen with other studies in Nigeria [16-18].

Obstetrics and Gynecology emerged as the most preferred first-choice specialty among respondents, followed by Cardiothoracic Surgery and a significant proportion of undecided students. Similar trends were observed for second-choice specialties, where undecided respondents ranked highest, followed by Obstetrics and Gynecology and General Surgery. For third-choice preferences, undecided respondents, Cardiology, and Public Health were the most common. The strong preference for Obstetrics and Gynecology aligns with findings from studies conducted in South-West Nigeria, North-Central Nigeria, Uganda, Botswana, and Jordan [19, 20]. However, the high proportion of undecided respondents contrasts with earlier research, which reported fewer undecided students [19, 20]. This uncertainty may reflect growing indecision among final-year students despite their exposure to various specialties or a commitment to a first-choice specialty, leaving other options unexplored. Specialties like Infectious Disease, Otolaryngology, Pathology, and Radiology garnered less than 1% interest among respondents. These results are consistent with prior studies showing

First choice specialty	Level, n(% <sup>a</sup> )		Gender, n(%	b)	Career coun	selling, <i>n</i> (%)	Having a do family, <i>n</i> (%)	octor in the
	Penultim-ate	Final	Male	Female	Yes	No	Yes	No
Obstetrics and gynaecol- ogy	28 (10.6)	33 (18.9)	27 (44.3)	34 (55.7)	21 (34.4)	40 (65.6)	28 (45.9)	33 (50. 1)
Cardiothoracic surgery	35 (13.3)	14 (8.0)	42 (85.7)	7 (14.3)	11 (22.4)	38 (77.6)	9 (18.4)	40 (81.6)
Neurosurgery	25 (9.5)	4 (2.3)	23 (79.1)	6 (20.7)	10 (34.5)	19 (65.5)	8 (27.6)	21 (72.4)
General surgery Psychiatry	20 (7.6) 13 (4.9)	12 (6.9) 9 (5.1)	18 (56.3) 10 (45.5)	14 (43.7) 12 (54.5)	8 (25.0) 8 (36.4)	24 (75.0) 14 (63.6)	13 (40.6) 13 (59.1)	19 (59.4) 9 (40.9)

Table 6 Distribution of first-choice specialty preferences among medical students by level, gender, career counseling and family medical background

<sup>a</sup> Percentages expressed as a fraction of the actual size of each class

 Table 7
 Chi-square associations between some variables and first choice specialty

		First choice specialty		
S/N	Variable	Chi-square value	df	<i>p</i> -value
1	Level	39.360	25	0.034
2	Gender	113.352	75	0.030
3	Region	133.246	135	0.333
4	Career counselling	42.321	25	0.801
5	Having a doctor in the family	29.030	25	0.263

Table 8 Suggested improvements to the medical curriculum

Suggestion	Frequency, n(%)
Enhance mentorship programs	336 (76.5)
Offer more research opportunities	258 (58.8)
Introduce more elective rotations	242 (55.1)
Include specialized tracks in the curriculum	180 (41.0)
Others	45 (10.3)

limited interest in diagnostic fields [10, 19, 20]. For context, Nigeria had only 105 pathologists for a population of 200 million in 2022 and one radiologist per 566,000 people in 2015, highlighting a critical mismatch between healthcare needs and workforce distribution [21, 22]. Additionally, no students expressed interest in core preclinical fields like Anatomy, Biochemistry, or Physiology, likely due to limited research opportunities and a perception that clinical medicine offers more lucrative and direct career paths.

Gender played a significant role in specialty preference, with female students showing a higher inclination toward Obstetrics and Gynaecology. This trend may reflect societal perceptions that associate women with maternal and child health-related fields [23]. On the other hand, male students were more likely to choose General Surgery, which is often perceived as physically demanding and requiring endurance, characteristics traditionally linked to masculinity. This is similar to a study conducted in South-East Nigeria, which found that 32.3% of males preferred surgery, compared to only 13% of females [10]. Another study in Sudan also reported 46.4% of males chose surgery compared to 24.8% of females [24].

Academic level also influenced specialty preference (p = 0.034), with final-year students exhibiting more diverse interests compared to their penultimate-year counterparts. This aligns with findings from developed settings. For instance, a study conducted in the United States revealed that the pre-clinical years had a significantly less positive impact on specialty interest and choice



Fig. 1 Top specialties by region

compared to the clinical years [11]. This shift could be attributed to increased clinical exposure, mentorship opportunities, and a better understanding of different specialties, allowing final-year students to refine their career choices based on practical experience rather than initial perceptions. The public health implication of this finding is significant. It has the potential to improve the distribution of medical professionals across various specialties, particularly in underserved areas like pathology, radiology, and public health. It emphasizes the importance of integrating early and varied clinical experiences, career guidance, and mentorship programs into the medical curriculum. Doing so could help address imbalances in the healthcare workforce by encouraging informed, interest-driven specialty choices aligned with national health needs, ultimately contributing to a more equitable and efficient healthcare delivery system.

Regional differences were evident in Fig. 1, with Southern students showing higher rates of undecided preferences. This could be due to a number of factors which could include a higher academic pressure on medical students in the South. They may face intense competition and expectations to excel in their studies, potentially causing them to delay decisions about specialties until they feel more confident in their academic performance or clinical experiences. It could also be that southern regions often have better-equipped teaching hospitals and medical schools that expose students to a wide array of specialties [25]. This broad exposure may leave students overwhelmed with options, making it harder for them to decide on a specific path early on.

Personal interest was identified as the most significant factor influencing specialty choice, with 87% of students citing it as key, consistent with findings from other studies [8, 10, 19]. The study from South-East Nigeria [10] found that 58.2% of respondents cited personal interest as their reason for choosing surgery. Similarly, a study conducted in Botswana [8] reported that 46.2% of medical students identified personal interest as a major factor influencing their specialty preference. Clinical rotations also played an important role for 70% of respondents, with positive mentorship and engaging learning environments often inspiring students to pursue specific fields. For instance, studies in South-Eastern Nigeria noted that dedicated and supportive faculty in Obstetrics and Gynecology motivated students to specialize in the field [10]. Moreover, the intellectually demanding nature of a specialty influenced more than half of the respondents, aligning with prior studies in Ibadan where 93.2% of final year cited content of the specialty as a factor that influence choice of specialty [12, 14, 26]. Financial considerations were also pivotal, with 72.9% of respondents emphasizing the potential lucrativeness of a specialty as a determining factor. This is consistent with studies from Brazil, Uganda, and Syria, where financial stability significantly influenced career choices [27-29]. However, low financial incentives in less popular specialties may deter students from pursuing these fields. Policymakers must address this issue by improving the financial attractiveness of underrepresented specialties to balance workforce distribution. Notably, 80% of respondents indicated that the content of a specialty influenced their decisions. Public Health/Community Medicine, chosen by only 4%, illustrates how the lack of direct patient care can make certain fields less appealing. This aligns with earlier findings where students expressed poor perceptions of Community Medicine [10]. Enhancing students' understanding of the practical applications of less traditional specialties may encourage interest in these fields.

Statistically significant factors included desired practice settings, minimal/predictable work hours, and shorter training periods, which align with findings from Korean, Brazilian, and Ugandan studies [27, 28, 30]. Role models influenced 42.8% of respondents, emphasizing the importance of mentorship in shaping specialty preferences [26–28]. However, negative role modeling could deter students from specific fields, emphasizing the need for positive and inspiring mentorship. Spiritual beliefs were another notable factor, with many students citing inspiration and guidance from God. Other less influential factors included parental influence, prestige of specialty, disease burden, and scarcity of specialists.

Students recommended introducing more elective rotations to provide exposure to less familiar specialties, although this could further extend the already lengthy medical training period. The lack of career counseling was also highlighted, with 12.8% of respondents undecided about their future specialties despite being in advanced stages of medical training. This mirrors findings from Southeastern Nigeria, where most students reported no access to structured career guidance during medical school [10]. Additionally, respondents suggested extending clinical rotation durations, noting that longer rotations in core specialties correlated with higher interest, while shorter rotations in fields like Radiology and Anesthesia contributed to lower interest [10, 28].

#### Limitations

A major limitation of our study was the low response rate, which was attributed to the unwillingness of some students to complete the survey forms, possibly exacerbated by an inundation with electronic surveys. Some participants started filling out the forms but did not complete them, leading to a drop in the final response rate. This incomplete data collection may have also been influenced by network issues. This could further contribute to selection bias, as those who were fully able to complete the survey and the responses included in the study may have different perspectives or motivations compared to those who did not. The survey however was deliberately kept concise and deployed using the most effective delivery method—an online, mobile-optimized, self-administered questionnaire. Nevertheless, the anticipated limitations could not be entirely mitigated.

Another limitation of this study was that ethical approval was obtained from only one institution, despite the study's national scope. While this approval was deemed sufficient under national research guidelines, obtaining ethical clearance from multiple institutions would have strengthened the study's ethical oversight. Another limitation to the study was that respondents were not proportionally distributed across the geopolitical zones. This could limit the generalisability of our findings across the country because of specific regional differenceslike the number and size of the medical schools, socio-economic class, and teaching methods. Additionally, there was a potential for response bias due to voluntary participation. As a cross-sectional study, it captured preferences at a single point in time and could not assess how specialty interests changed throughout medical school or during residency training. Longitudinal studies could provide deeper insights into how specialty choices evolve throughout medical education and residency training.

#### Conclusion

This study has highlighted the specialty preferences of Nigerian medical students in the 35 medical schools that participated and the multifactorial influences shaping their career choices. The most preferred specialties were Obstetrics and Gynecology, Surgery, and Internal Medicine, while fields such as Family Medicine and Pathology were less frequently chosen. Key determinants of specialty preference included personal interest, perceived prestige, intellectual challenge, and anticipated income. Academic level and gender also played significant roles, with final-year students showing more diverse interests and males demonstrating a stronger preference for surgery.

These findings emphasize the need for structured career guidance within medical schools to ensure students are well-informed and exposed to the full spectrum of medical specialties. It is recommended that medical schools integrate formal mentorship and career counseling programs early in the curriculum, facilitated by experienced professionals across various specialties. Furthermore, health policymakers should prioritize equitable workforce distribution by offering incentives and supportive policies for underrepresented but critical fields such as Family Medicine and Psychiatry.

By addressing these factors, it is possible to guide medical students toward informed and balanced career decisions, ultimately contributing to a more effective and equitable healthcare system in Nigeria.

#### Abbreviations

SPSS	Statistical Product and Service Solutions
UI/EC	University of Ibadan/Ethics Committee
UI/UCH	University of Ibadan/University College Hospital

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#### **Clinical trial number**

Not applicable.

#### Authors' contributions

TO conceptualized the study. TO, CE, CU, RA, EO, JT, CO, JA, AO, SA, OO, MO, WP, AF, LR, CA, EI, NC, OO, OJ, AO, IA, OA, PE, NS, PA, DU, EA, AA, CE, GO, OJ, CO, IA, JA, IA, OB, JG, BU, EA, MY, and MK were involved in data collection. TO analyzed the data. All authors wrote the first and final drafts. TO and RA read and approved the final manuscript.

#### Funding

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#### Data availability

Data can not be made public, but will be made available to researchers upon request.

#### Declarations

#### Ethics approval and consent to participate

Ethical approval for the study was granted by the Joint University of Ibadan/ University College Hospital Ethics Review Committee (UI/EC/24/0701). Informed consent was obtained electronically from all participants. The study adhered to the ethical principles outlined in the Declaration of Helsinki for research involving human subjects.

#### Consent for publication

Informed consent was obtained electronically from all participants. Availability of data and materials.

#### **Competing interests**

The authors declare no competing interests.

#### Author details

<sup>1</sup>Scientific Research and Medical Journal Committee, Nigerian Medical Students' Association, Abuja, Nigeria.<sup>2</sup>College of Medicine, University of Ibadan, Ibadan, Nigeria.<sup>3</sup>College Research and Innovation Hub, Ibadan, Nigeria. <sup>4</sup>Neurosurgery, Surgery Interest Group Africa, Lagos, Nigeria. <sup>5</sup>College of Health Sciences, Bingham University, Jos, Nigeria. 6College of Medical Sciences, Abubakar Tafawa Balewa University Bauchi, Bauchi, Nigeria. <sup>7</sup>College of Health Sciences, University of Jos, Jos, Nigeria. <sup>8</sup>College of Health Sciences, University of Ilorin, Ilorin, Nigeria. <sup>9</sup>College of Medicine, University of Nigeria, Nsukka, Nigeria. <sup>10</sup>College of Health Sciences, Nnamdi Azikiwe University, Nnewi, Nigeria. <sup>11</sup>College of Health Sciences, University of Port-Harcourt, Port-Harcourt, Nigeria. <sup>12</sup>Obstetrics and Gynaecology, Surgery Interest Group Africa, Lagos, Nigeria. <sup>13</sup>College of Medicine, Benson Idahosa University, Benin, Nigeria. 1 <sup>4</sup>College of Medicine, Abia State University Teaching Hospital, Aba, Nigeria. <sup>15</sup>Obafemi Awolowo College of Health Sciences, Olabisi Onabanjo University, Sagamu, Nigeria.<sup>16</sup>College of Health Sciences, Obafemi Awolowo

University, Ile-Ife, Nigeria. <sup>17</sup>College of Medical Science, University of Calabar, Calabar, Nigeria. <sup>18</sup>University of Calabar Medical Student Research Hub, University of Calabar, Calabar, Nigeria. <sup>19</sup>College of Health Sciences, Ebonyi State University, Abakaliki, Nigeria. <sup>20</sup>College of Health Sciences, Bayero University, Kano, Nigeria. <sup>21</sup>College of Health Sciences, Gombe State University, Gombe, Nigeria.

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