Research Article

Choice of Specialization among Female Clinical Medical Students of Bayero University Kano, Nigeria

Ayyuba Rabiu*, Idris Sulaiman Abubakar, Garba Ibrahim and Jamila Ibrahim Mu'uta

Bayero University Kano, Kano, Kano, Nigeria

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ABSTRACT

Background: The field of medicine is very wide; female medical students also have their choice of specialization which many develop in medical schools due to different factors.

Methodology: It was a cross sectional study that was conducted among female clinical medical students of Bayero University Kano. Ethical approval was obtained from the hospital Ethical Committee. Questionnaire was administered to all consenting female students. Data were analysed by SPSS Electronic Software Version 18 (SPSS Inc, IL, Chicago, USA). A P value of less than 0.05 was considered statistically significant.

Results: Eighty five female medical students participated in the study. Mean (SD) age was 23.09 ± 1.8 years. Seventy two (84.70%) chose clinical medicine to be their future career while 13 (15.30%) were undecided. Only 15 (22.70%) decided to specialize in their career of choice. Obstetrics and Gynaecology was the most interested speciality of choice (30.80%). Most students were interested in the reward in working in the speciality 54 (68.40%) followed by interest in the clinical work 52 (65.80%). Many of the respondents 41 (49.4%) considered their career development as a priority in future career plans in practice location, and educational environment for children 40 (51.90%). Only 15 (18.00%) were keenly motivated to work in rural areas regardless of the duration of time.

Conclusion: Female medical students preferred to be clinicians in their future career with obstetrics and gynaecology as the most interested speciality of choice. Their career development and educational environment for children were the priority in future career plans in practice location.

Keywords: Choice of specialization; Female medical students; Kano; Nigeria

INTRODUCTION

The speed with which modern medicine is progressing, the Bachelor of Medicine, Bachelor of surgery (MBBS) degree is more or less an introductory degree in the practice of contemporary medicine. The field of medicine is a diverse one, hence, the need for specialization in the numerous fields and super-specialization in various ever increasing branches of medicine. The interest in any of the fields is developed mostly in medical school by going through the various fields during training, while others develop interest even before embarking on the study of medicine, mainly from personal interest in the specialities, job satisfaction, employment opportunities, job security [1] and gender variation [2].

The projection of future health professionals can be met based on the career interest of the present undergraduate medical students [1]. However; several studies have shown that choice of specialization is motivated by the potential of economic gains from the field of specialization [3]. gender and personal experiences during undergraduate training [4]. Identifying factors that influence the student's choice of specific specialty during training is of paramount importance, and can be used to stimulate interest in them [5].

Observational studies have shown that students hardly choose basic sciences mainly because the skills and knowledge are limited to teaching and research and very restrictive [2,6]. On that thought, there is a need therefore to find out what makes the students choose a career so as to balance the number of doctors in each specialty.

Corresponding Author:

Ayyuba Rabiu, Bayero University Kano, Kano, Kano Nigeria, E-mail: ayyubarabiu@yahoo.com

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Studies done in Maiduguri among medical students showed that experience during postings was the most influential factor for choosing a career, then role models and job opportunities [7]. Most females chose obstetrics and gynaecology, then paediatrics. In Lagos, however, the most influential factor was personal interest and then job satisfaction and most of the students chose surgery, then obstetrics and gynaecology and paediatrics [8]. A study done in Ibadan, south western Nigeria, showed that expectation of material rewards was the most influential factor then societal appreciation of the specialty, and response of the patients to treatment. For these reasons, the students chose surgery then paediatrics and obstetrics and gynaecology [9]. In Malaysia, the influence of teachers was the most influential factor. For this reason, there were more female students choosing internal medicine then surgery [10]. In Jordan, a study done there showed more females choosing obstetrics and Gynaecology, then paediatrics and surgery [11]. In Egypt, it was also found that more females posted for obstetrics and gynaecology mainly because of subject content, future location and settling intention and lecturer's personality [12].

In a Hausa-Muslim predominated society where women are expected to interact less with men; females are expected to attend to females in the health care delivery, there is the need to explore factors that determine choice of specialization among female medical students so that medical education can be tailored towards community needs while maintaining standards.

OBJECTIVES

This study was conducted to find out the choices of postgraduate training and factors that influence their choices among the female clinical medical students.

MATERIALS AND METHODS

It was a cross sectional study that was conducted at Aminu Kano Teaching Hospital, which is a Teaching Hospital for the Medical College of Bayero University Kano. The hospital is situated in the North-western geo-political zone of Nigeria. The hospital is located in Tarauni Local Government Area of Kano State, extending between Zaria road and new hospital road in Gyadi-gyadi.

The study was carried out among all consenting female clinical medical students of Bayero University Kano. Ethical approval was obtained from the Ethical Committee of Aminu Kano Teaching Hospital. Self-administered questionnaire consisted of close and opened ended questions, was structured and pre tested before administering to all consenting female students. Information on socio-demographic characteristics and choice of specialization among others was recorded on the questionnaire based on the available literature on choices of specialization among medical students. Data were analysed by SPSS Electronic Software Version 17. Fischers' Exact Test was used where criteria for applying Chi-square test was not met. A P-value of less than 0.05 was considered statistically significant.

RESULTS

Eighty five female medical students participated in the study. The mean (SD) age was 23.09 ± 1.76 years. The age range was 18-22 years. Sixty six (77.60%) students were within the age group of 18 to 24 years. Others 19 (22.40%) were within the age group of 25 to 29 years. Majority of the respondents were Hausa/Fulani 68 (84.0%). Other minority groups comprised Gbayi, Nupe, Urhobo, Babur and Kanuri among others.

Only 19 (22.40%) of the students were married. Others were single 66 (77.60%). Majority of the students were of the Islamic faith 79 (92.90%). Christians constituted 6 (7.10%). Only one student (1.30%) was a Cameroonian. The remaining students were Nigerians (Table 1).

Age group	Frequency	Percentage (%)
18-24	66	77.6
25-29	19	22.4
Total	85	100
Ethnic group		
Hausa/Fulani	68	84
Igbo	4	4.9
Yoruba	6	7.4
Others	3	3.7
Total	81	100
Marital status		
Single	66	77.6
Married	19	22.4
Total	85	100
Parity		
Nullipara	8	42.1
Primipara	8	42.1
Multipara	3	15.8
Total	19	100
Number of living children		
0	8	42.1
1	9	47.4
2	2	10.5
Total	19	100
Religion		

Islam	79	92.9
Christianity	6	7.1
Total	85	100
Nationality		
Nigerian	79	98.8
Others	1	1.3
Total	80	100

Table 1: Socio-demographic characteristics of the respondents.

There were no statistically significant associations between their age group, ethnic group, and their future career plans in speciality (X^2=0.43, P=0.836; (P(Fischer's)=0.283; respectively).

Ten students (11.90%) had college/university education before medical school of which 9 (10.70%) were science courses. The rest of the respondents did not 74 (88.10%). Three students (3.60%) had other undergraduate degrees before medical school. Six students (7.10%) also had working experience before medical school.

Significant proportion of the respondents 66 (77.60%) grew-up in a large city till the age of 16 to 18 years and only 7 (8.20%) their parents were physicians/dentists.

Seventy two (84.70%) female clinical medical students chose clinical medicine to be their future career while 13 (15.30%) were undecided. No student chose other basic sciences. Only 15 (22.70%) decided to specialize in their career of choice while 34 (51.50%) opted for general practice (No to specialization). The remaining 17 (25.80%) were equivocal (Table 2).

Variables	Frequency	Percentage (%)
Have you entered any college or university before medical school?		
Yes (science course)	9	10.7
Yes (Arts course)	1	1.2
No	74	88.1
Total	84	100
Do you have any other undergraduate degree?		
Yes (Science course)	2	2.4
Yes (Arts course)	1	1.2
No	82	96.5
Total	85	100
Do you have work experience before medical school?		
Yes	6	7.1
No	79	92.9
Total	85	100
Which of the following best describes the area you grew-up till adolescent?		
Large city (population of >500,000.00)	66	77.6
Midsize city (population of 100,000.00 to 300,000.00)	11	12.9
Small city (population of 50,000.00)	7	8.2
Town/village	1	1.2
Total	85	100
Are any of your parents a physician/dentist?		
Yes	7	8.2
No	78	91.8
Total	85	100
Did you personally know a physician/dentist with whom you felt very close before entering medical school?		
Yes	47	56
No	37	44
Total	84	100
Before entering medical school, did you encounter a physician/ dentist as a role model?		
Yes	47	56
No	37	44
Total	84	100
Future career		
Clinical medicine	72	84.7
Undecided	13	15.3
Total	85	100
What types of clinical medicine most accurately describes your goal?		
Specialist/consultant	15	22.7
General practitioner	34	51.5
Equivocal	17	25.8
Total	66	100

Table 2: Characteristics of the students in relation to future medical specialty.

Reasons/factors for choosing the specialty	Very important (no)%	Important (no)%
Interest in the clinical work	52 (65.8)	20 (25.3)
Interest in the targeted population	30 (38.0)	30 (38.0)
Interest I scientific aspects	13 (16.9)	22 (28.6)
Interest in the surgical procedures	30 (37.5)	21 (26.3)
Reward in working in the specialty	54 (68.4)	21 (20.3)
Prospect for development of the field	29 (38.2)	28 (36.8)

Highly respected in society	15 (19.0)	22 (27.8)
I suffered from the illness of the specialty	2 (2.5)	6 (7.5)
Friend/ family suffered from the illness of the specialty	14 (17.3)	13 (16.0)
Became interested in the specialty before medical school	23 (28.7)	10 (12.5)
Experience at a medical school	27 (34.2)	25 (31.6)
Encounter with role model teacher	25 (30.9)	30 (37.0)
Advice/ expectation of parents	11 (13.8)	15 (18.8)
Advice from teachers/ consultants	5 (6.3)	11 (13.9)
Influence of friends	1 (1.3)	1 (1.3)
Attainable life style	13 (16.3)	18 (22.5)
Working hours	14 (17.3)	15 (18.5)
Job availability	12 (14.8)	18 (22.5)
Expected incomes	4 (4.9)	18 (22.2)
Expectation to inherit practice of my parents	1 (1.3)	3 (3.8)
Ease of opening practice	3 (3.8)	11 (13.8)
Considering future work condition	11 (13.8)	25 (31.3)
Personal experience	13 (16.0)	15 (18.5)
Social encouragement	11 (13.6)	25 (30.9)
Others	1 (20.0)	0 (0)

Table 3: Characteristics of the specialty of interest.

Factors	Very important numbers (%)	Important numbers (%)
My home town	34 (40.0)	22 (25.9)
Home town of my partner	17 (20.7)	24 (29.30)
Parent's residence	14 (17.1)	31 (37.8)
Partners' preference	17 (20.5)	24 (28.9)
Educational environment for children	40 (51.9)	27 (35.1)
Location of my medical school	13 (15.7)	12 (14.5)
My career development	41 (49.4)	24 (28.9)
Research environment	32 (38.6)	25 (30.1)
Teaching opportunities	31 (37.8)	22 (26.8)
Availability of nearby specialized hospitals for referrals	36 (43.9)	25 (30.5)
Community atmosphere	17 (23.3)	26 (35.6)
Climate/natural environment	22 (26.5)	26 (31.3)S
Lifestyle	27 (32.1)	31 (36.9)
Income	20 (24.1)	30 (36.1)
Possibility of inheriting practice of my parents	3 (3.6)	4 (4.8)

Table 4: Future career plans in practice location.

Under graduate degree before medical school, area spent during adolescence, parents as physicians/dentists, were not associated with future career plans in speciality of choice (P (Fischer's)=0.396, P (Fischer's)=0.847, P (Fischer's)=0.290) respectively (Tables 3-5).

Variables	Future career plan		X^2 (P)
	Clinician	Others	
Age group			
≤23	41	7	0.43 (0.836)
>23	31	6	
Ethnic group			
Hausa/Fulani	59	9	-0.283
Others	13	4	
Undergraduate before medical school			
Yes	2	1	
no	70	12	-0.396
Area spent during adolescence			
City	71	13	
Town/rural area	1	0	-0.847
Parent as physician/dentist			
Yes	5	2	
no	67	11	-0.29

Table 5: Cross tabulation.

Obstetrics and gynaecology was the most interested speciality of choice (30.80%), followed by surgery (17.95%) and anaesthesia (17.95%) (Figure 1).

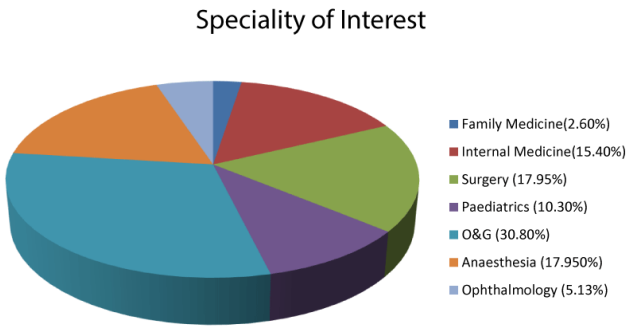

Figure 1: Speciality of interest.

Table 3 showed the characteristics of the speciality of interest for the female medical students. Most students were interested in the reward in working in the speciality 54 (68.40%) followed by interest in the clinical work 52

(65.80%), and interest in the targeted population 30 (38.00%).

Many of the respondents 41 (49.4%) considered their career development as a priority in future career plans in practice location, and educational environment for children 40 (51.90%) followed by availability of nearby specialized hospitals for referrals 36 (43.90%) (Table 4).

Up to 56 (67.00%) of the respondents were willing to work for certain period of times in rural areas and 15 (18.00%) were keenly motivated to work in rural areas regardless of the duration of time (Figure 2).

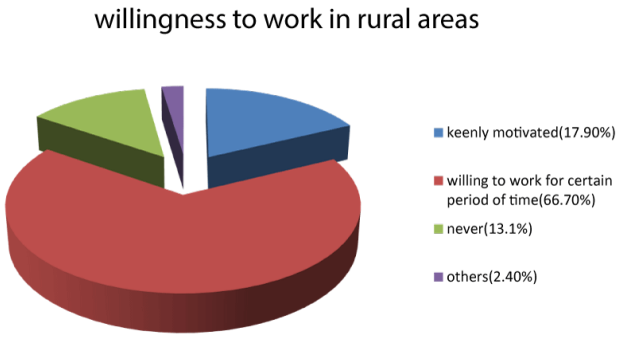

Figure 2: Willingness to work in rural areas.

DISCUSSION

The mean age ± SD of the female medical students was 23.09 ± 1.76 years. Our finding was similar to other studies [13,14] unlike in the developed nations, in our environment, medical students often get enrolled in medical schools without any undergraduate degree as such many of them are at a younger age. Hausa/Fulani were the majority of the respondents. This is not unconnected to the indigenous population of Kano and the whole North-Western Region of Nigeria.

Our study revealed a larger proportion (77.60%) of the female medical students' marital status as single. Majority of medical students are usually young and rarely get married before graduation partly because of the rigorous undergraduate medical training and their younger age. A study conducted on career intentions of final year medical students in Uganda revealed (91.20%) students were single [15].

We found out majority of the female medical students (92.90%) were of the Islamic Faith. Hausa/Fulani of the North-Western Nigeria are mainly Muslims. Our study did not find any statistically significant association between the age group, ethnic group of the students and their future career plans in speciality (P>0.05).

We also found few numbers (11.90%) of the students who had attended college/university education before medical school. Undergraduate degree before medical school was however, not associated with future career plan (P>0.05). Also, area spent during adolescent years or parents as physicians/dentists were not associated with future career plans in speciality of choice (P>0.05). This could be actually true but due to the smaller sample size in this study, the actual association could only be ascertain with a larger sample size.

Only 22.70% of the respondents decided to specialize in their respected areas of interest. The rest showed areas of interest with no commitment to further specialization. Specialization in medicine entails several years of vigorous training in the speciality of choice. Following graduation, majority of female medical students get married and start bearing children coupled with other home related responsibilities. Female doctors find it difficult to cope with the training. Makama et al. [16] showed that the impact of female medical doctors on their time for family and other social engagements, heavy workload involvement of lots of physical efforts, were the major factors considered as deterrent to female doctors' choice of specialization especially in surgical career.

Our study found obstetrics and gynaecology (30.80%) as the most interested speciality of choice followed by surgery and anaesthesia (17.95%). This might not be unconnected to the culture and religion of the majority of the students, coupled with the desire to help in areas of deficiencies. In a Hausa-Muslim predominated society, women are preferred to be attended by female doctors especially when it comes to sensitive issues related to childbirth and fertility. A study conducted on medical students in formulating their speciality preference in Jordan showed that the most preferred choice of specialization among the female medical student was obstetrics and gynaecology[12].

Interest in the rewards of working in the speciality (68.40%) followed by interest in the clinical work (65.80%) were the major reasons among the medical students for choosing their speciality of choice. This was contrary to the findings of Chew et al. [10] where influence of teaching and hospital consultants (34.20%) and inspiration during clinical posting (33.60%) were the major factors considered by medical students in choosing a speciality. The difference could be due to methodology and socio-demographic characteristics of the study populations.

We found out many of the respondents (49.40%) considered their career development as a priority in future career plans location and educational environment for children (51.90%). In a study conducted on the relationship between entering medical students' background and career plans and their rural practice; rural curriculum, residency location or spouse were the major predictors of practicing in rural areas [17].

We found few female medical students (18.00%) with willingness to stay and practice in rural areas regardless of the duration but a larger number of them (67.00%) were willing to work for a certain period of time in the

rural areas. With improvement in living standard and hospital equipment, many of these with intention of working for a short duration in rural areas may end up spending their entire practice there. A study conducted in Ghana on willingness to work in rural areas and the role of intrinsic versus extrinsic professional motivations among female medical students showed that despite the desire to help others, female medical students were not willing to work in rural areas [18].

CONCLUSION

Female medical students preferred to be clinicians in their future career with obstetrics and gynaecology as the most interested speciality of choice. Their career development and educational environment for children were the priority in future career plans in practice location.

Few female students were willing to work in rural areas regardless of the duration of time; the majority preferred to work for a limited number of years due to their career development as a priority in future career plans location, and educational environment for children.

We recommend improvement on the availability of teaching hospitals for specialization and social amenities coupled with standard schools for children education in rural areas and nearby cities in order to encourage female medical students to work in rural areas.

LIMITATIONS

Self-administered questionnaire based study, non-response in some of the questions, smaller number of female medical students.

REFERENCES

1. Subba SH, Binus VS, Kotian MS, Joseph N, Mahamood AB, Dixit N, et al. Future specialization interest among medical students in southern India. National Med J India 2012;25:226-9.
2. Kumar A, Mitra K, Nagarajan S, Poudel B. Factors influencing medical students' choice of future specialization in medical sciences: A cross-sectional questionnaire survey from medical school in China, Malaysia and region of south Asian association for regional cooperation. North Am J Med Sci 2014;6:119-25.
3. Morgan PA, Hooker RS. Choice of specialities among physician assistants in the United States. Health Aff 2010;29:887-92.
4. Alshahram M, Dhafery B, AlMulhim M, Alkhadra F, AlBagshi D, Bukhamsin N. Factors influencing Saudi medical students and interns' choice of future speciality: A self-administered questionnaire. Adv Med Educ Pract 2014;5:397-402.
5. Takeda Y, Mario K, Snell L, Otaki J, Takahashi M, Kari I. Characteristic profiles among students and junior doctors with specific career preferences. BMC Med Educ 2013;13:125.
6. Odusanya O, Alakija W, Akesode FA. Socio demographic profiles and career aspirations of medical students in a new medical school. Niger Postgrad Med J 2000;7:112-5.
7. Omotara BA, Asuzu MC, Padonu MKO. The dynamics of medical specialty choices and their implication for medical education in developing countries: A Maiduguri medical school study. East Afr Med J 1991;68:547-54.
8. Odusanya OO, Nwawolo CC. Career aspirations of house officers in Lagos, Nigeria. Med Educ 2001;35:482-7.
9. Akinyinka OO, Ohaeri JU, Asuzu MC. Beliefs and attitudes of clinical year students concerning medical speciality: An Ibadan medical school study. Afr J Med Med Sci 1993; 21:89-99.
10. Chew YW, Rajakrishnan S, Low CA, Jayapalan PK, Sreeramareddy CT. Medical students' choice of specialty and factors determining their choice: A cross sectional questionnaire survey in Melaka Manipal Medical College, Malaysia. Biosci Trends 2011;5:69-76
11. Khader Y, Al-Zoubi D, Amarin Z, Alkafagei A, Khasawneh M, Burgan S, et al. Factors affecting medical students in formulating their specialty preferences in Jordan. BMC Med Educ 2008;8:32.
12. Galal S, El-Dinary A, Hassan HA, El-Sherbini AF. Specialization preference and attitude of medical students in Cairo within the primary health care context. J Egypt Public Health Assoc 1990;65:681-98.
13. Lefevre JH, Roupret M, Kerneis S, Karila L. Career choices of medical students: A national survey of 1780 students. Med Educ 2010;44:603-12.
14. Bittage M, Odukogbe ATA, Nyan O, Jallow B, Omigbodun AO. Medical students' choices of speciality in the Gambia: the nedd for career counselling. BMC Med Educ 2012;12:1-9.
15. Kizito S, Mukunya D, Nakitende J, Nambasa S, Nampogo A, Kalyesubula R, et al. Career intentions of final year medical students in Uganda after graduating: the burden of the brain drain. BMC Med Educ 2015;15:122.
16. Makama JG, Garba ES, Ameh EA. Under representation of women in surgery in Nigeria: by choice or by design. Oman Med J 2012;27:66-9.
17. Rabinowitz HK, Diamond JJ, Markham FW, Santana AJ. The relationship between entering medical students' backgrounds and career plans and their rural practice outcomes three decades later. Acad Med 2012;87:493-7.
18. Agyei-Baffour P, Kotha SR, Johnson JC, Gyakobo M, Asabir K, Kwansah J, et al. Willingness to work in rural areas and the role of intrinsic versus extrinsic professional motivations - A survey of medical students in Ghana. BMC Med Educ 2011;11:56.