

PERCEPTION AND WILLINGNESS OF MEDICAL STUDENTS TOWARDS WORKING IN RURAL COMMUNITIES

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ABSTRACT

INTRODUCTION: The preference for the place of practice plays a vital role in the distribution of human resources for health. Research evidence points at specific medical student characteristics and preferences that can predict their practice preferences. This study aims to ascertain medical students' perception and willingness to practice in rural areas after graduation.

METHODS: The study was carried out among 400-600 level undergraduate medical students at University of Nigeria Enugu Campus in Enugu metropolis, Enugu state, Nigeria. An analytical cross sectional study design involving use of questionnaire was done. Chi Square test and Binary logistic regression were used to ascertain socio-demographic factors associated with willingness to practice in rural areas.

RESULTS: Majority of respondents were aged 21-25 years 134(67.0%), males 133(66.5%) and parents lives in urban area 166(83.0%). About 6(3.0%) were satisfied on current status of rural health service, 132(66.0%) stated that medical training for rural practice were adequate while 67(33.5%) were willing to work in rural area. There was statistically significant association of father's occupation with willingness to practice in rural area ($p=0.017$). Determinant identified was fathers being farmers 1.4 times (AOR 1.143; 95% CI 1.27-1.84).

CONCLUSION: Perception of working in rural areas was good, while the willingness was poor. The major reasons for not willing to work in rural area includes; low standard of living and poor educational opportunities for children Giving doctors special allowances and changing duration of rural postings will encourage them to look forward to working in rural areas.

KEY WORDS: Perception, willingness, practice, rural area

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INTRODUCTION

Human resources for health are one of the most important elements of the healthcare system of any country as the quality of delivering health services depends primarily on the performance of providers.¹ The World Health Organization (WHO) recommends the minimum density of 2.3 doctors, nurses and midwives per 1000 population to achieve the minimum levels of key health interventions.¹ However, the public health sector of many countries in Africa have been facing a serious shortage of physicians, nurses and midwives especially in rural areas.²

Despite the increase in the number of health facilities and medical schools in the country, our health care system suffers from the shortage of and

skewed distribution of healthcare workers, particularly physicians. This can be explained partly by the fact that Nigeria urban areas are more attractive to healthcare professionals due to social, cultural and professional advantages of urban work.³ Large metropolitan centre most often offer greater opportunities for career and educational advancement, better employment prospects for health professionals as well as their spouse and easier access to private practice. Equally there are better lifestyle related services, amenities and better access to education for the children of these health workers.⁴ This is an important factor in Nigeria because public servant salaries are relatively low.⁵

In an international survey of fourteen countries, it was found that rural doctors made up only 8 % to 22% of the population of doctors which are meant to serve between 25% and 70% of the rural population of these countries.⁶ Moreover, inadequacy of optimal numbers of health workers with the appropriate skills-set is most pronounced

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in the rural and remote regions of Nigeria where majority of the population live.⁷ The Under-five mortality rate in rural areas is estimated at 243 per 1,000 live births, compared to 153 per 1,000 in urban areas. About 59% of women in urban areas deliver with a doctor, nurse, or midwife, in contrast to 26 % of women in rural areas.

World Health Report documented Nigeria as one of 36 sub-Saharan African countries in the midst of a health workforce crisis. Nigerian health workers are inequitably distributed in favour of urban, southern, tertiary health care services delivery and curative care. An urban Nigerian resident has a 3-fold greater access to doctors. There are twice as many nurses/midwives compared with rural residents. In some health facilities in the rural areas, where a full staff complement is employed less than 50% are actually on duty.³ More so, there is exodus of health professionals especially doctors to developed countries. The remaining doctors and nurses are reluctant to relocate to remote areas where communication with other regions is poor coupled with amenities for health professionals and their families lacking. As a result rural dwellers often have to travel considerable distances in order to obtain treatment. This constitutes a major delay in seeking health care and leading to disease presenting in advanced stage.⁷

Rural employment is usually regarded as having a low status while urban positions are perceived as more prestigious. Since medical students are the future professionals, understanding the perception and willingness of medical students towards their future rural medical practice can contribute to addressing this shortage. Exploring their conceptions about willingness to practice in rural areas will allow explore pathways to resolving some of the problems militating against uptake of medical practice in rural areas. Moreover, further analysis of the situation will help in formulation of possible interventions that can improve the curriculum and policy at training institutions and at government level.

METHOD

The study was carried out among 400-600 level undergraduate medical students at University of Nigeria Enugu Campus in Enugu metropolis, Enugu state, Nigeria. Enugu metropolis covers an

area of 80 square miles (200square metres) and the city has a population of 722,664 according to the 2006 Nigerian census. Students who have had clinical postings (exposure) both in urban and rural postings in their medical training and gave informed consent to participate were studied. An analytical cross sectional study design was used. Pretested, unstructured, self-administered questionnaire was used. Data was analysed using IBM Statistical Package for Social Sciences version 21. They were presented in tables using frequency and percentages. Chi Square test was used to ascertain associations between socio-demographic characteristics of respondents with willingness to work in rural area on graduation. Binary logistic regression was used to assess the determinants of willingness to work in rural area on graduation. Ethical approval was from Health Research and Ethics Committee of University of Nigeria Teaching Hospital. Oral Informed consent was obtained from each participant and voluntary participation was assured. Confidentiality was maintained throughout the study. Level of significance was at $p \leq 0.05$

RESULTS

Table 1: socio-demographics variables of respondents

Variables	n= 200	
	Frequency	Percentage
Age		
16-20	20	10.0
21-25	134	67.0
26-30	46	23.0
Mean(SD)	23.4(4.7)	
Sex		
Male	133	66.5
Female	67	33.5
Residence		
Urban	166	83.0
Rural	34	17.0
Educational level		
400	54	27.0
500	114	57.0
600	32	16.0
Father's occupation		
Civil servants	116	58.0
Farmer	18	9.0
Trading/business	58	29.0
Artisan	8	4.0
Mother's occupation		
Civil servant	109	54.5
Farmer	14	7.0
Trading/business	70	35.0
Artisan	7	3.5
Father's educational level		
Primary	43	21.5
Secondary	29	14.5
Tertiary	128	64.0
Mother's educational level		
Primary	32	16.0
Secondary	54	27.0
Tertiary	114	57.0

Table 1 shows the socio-demographic characteristics of respondents. The mean age of the respondents was 23.4 years and standard deviation of 4.7 years. Majority of respondents were; aged 21-25 years 134(67.0%), males 133(66.5%), lives in urban area 166(83.0%) and in 500 level 114(57.0%). Also majority of their fathers were civil servants 116(58.0%) and had tertiary education 128(64.0%). Equally most of their mothers were civil servant 109(54.5%) and had tertiary education 114(57.0%).

Table 2: Perception, willingness and recommendation on practice in rural area

Variables	n = 200	
	Yes Freq(%)	No Freq(%)
Satisfaction on current status of rural health service	6(3.0)	194(97.0)
Adequacy of medical training for rural practice	132(66.0)	68(34.0)
Willingness to work in rural area on graduation	67(33.5)	133(66.5)
If Yes, reason	n= 67	
To gain experience	45(67.2)	22(32.8)
Stress free life	6(9.0)	61(91.0)
Being respected	15(22.4)	52(77.6)
Health services for the poor	60(89.6)	7(10.4)
Greater career opportunities	21(31.3)	46(68.7)
If No, reason	n= 133	
Poor amenities	124(93.2)	8(6.8)
Lower salary	96(72.2)	36(27.8)
Low standard of living	118(88.7)	14(11.3)
Limited professional experience	98(73.7)	34(26.3)
No professional growth	98(73.7)	34(26.3)
Low educational opportunities for children	102(76.7)	30(23.3)
Have to live away from family	85(63.9)	47(36.1)
	Positive	Negative
	Freq(%)	Freq(%)
Opinion on why doctors are unwilling to work in rural area		
Low chances professional growth	161(80.5)	39(19.5)
Facility away from residence	169(84.5)	31(15.5)
Poor living conditions	184(92)	16(8)
Decrease in earning	149(74.5)	51(25.5)
Poor schooling for children	173(86.5)	27(13.5)
Influence of spouse/partner	148(74)	52(26)
Poor transportation and access to routes	176(88)	24(12)
Poor infrastructure	186(93)	14(7)
Cultural practices of rural communities	132(66)	68(34)
	Yes	No
Ways to improve willingness to practice in rural area		
Improve working conditions including accommodation	150(75.0)	50(25.0)
Giving doctors & students special allowances	168(84.0)	32(16.0)
Changing the duration of stay at rural areas during posting	134(67.0)	66(33.0)

Table 2 shows perception, willingness and recommendation on practice in rural area. About 6(3.0%) were satisfied on current status of rural health service, 132(66.0%) stated that medical training for rural practice were adequate while 67(33.5%) were willing to work in rural area on

graduation. Major reasons for unwilling to work in rural area includes; health services for the poor 60(89.6%), to gain experience 45(67.7%) and greater career opportunities 21(31.3%). Major reasons for not willing to work in rural area includes; poor amenities 124(93.2%), low standard of living 118(88.7%) and low educational opportunities for children 102(76.7%). Concerning opinion on why doctors are unwilling to work in rural area, major reasons are; poor infrastructure 186(93.0%), poor living conditions 184(92.0%), poor schooling for children 173 (86.5%) and low chances of professional growth 161(80.5%). Suggested ways of improving willingness to practice in rural area includes; improve working conditions including accommodation 150(75.0%), Giving doctors and students special allowances 168(84.0%) and changing the duration of stay at rural areas during posting 134(67.0%).

Table 3: Socio demographic of respondents associated with willingness to work in rural area on graduation and factors influencing them

Variable	n= 200		χ^2 (p value)	AOR (95% CI)
	Yes Freq(%)	No Freq(%)		
Age				
16-20	7(35)	13(65)		
21-25	45(33.6)	89(66.4)	0.04 (0.982)	NA
26-30	15(32.6)	31(67.4)		
Sex				
Male	45(33.8)	88(66.2)	0.02 (0.888)	NA
Female	22(32.8)	45(67.2)		
Marital status				
Single	66(33.8)	129(66.2)	0.42 (0.517)	NA
Married	1(20)	4(80)		
Family residence				
Urban	51(30.7)	115(69.3)	3.38 (0.066)	0.23 (0.15-1.35)
Rural	16(47.1)	18(52.9)		1
Educational level				
400	15(27.8)	39(72.2)		
500	43(37.7)	71(62.3)	2.21 (0.347)	NA
600	9(28.1)	23(71.9)		
Father's occupation				
Civil/public servant	33(28.4)	83(71.6)		0.92 (0.70-1.16)
Farmer	4(22.2)	14(77.8)	10.16 (0.017)	1.43 (1.27-1.84)
Trading/business	24(41.4)	34(58.6)		0.55 (0.48-2.79)
Artisan	6(75)	23(25)		
Mother's occupation				
Civil/public servant	33(30.3)	76(69.7)		
Farmer	4(28.6)	10(71.4)	2.84 (0.418)	NA
Trading/business	26(37.1)	44(62.9)		
Artisan	4(57.1)	3(42.9)		
Father's level of education				
Primary	15(34.9)	28(65.1)		
Secondary	11(37.9)	18(62.1)	0.42 (0.812)	NA
Tertiary	41(32.0)	87(68.0)		
Mother's level of education				
Primary	10(31.3)	22(68.7)		
Secondary	21(38.9)	33(61.1)	0.59(0.745)	NA
Tertiary	39(32.2)	75(67.8)		

Table 3 shows association of socio demographic of respondents with willingness to work in rural area on graduation. There was statistically significant association of father's occupation ($p=0.017$) with willing to work in rural area on graduation. Those whose fathers were farmers were about 1.4 times (AOR 1.143; 95% CI 1.27-1.84) likely to be willing to work in rural area on graduation than those whose parents are artisans.

DISCUSSION

The preference for the place of practice necessarily plays a vital role in the distribution of human resources for health. Research evidence points at specific medical student characteristics and preferences that can predict their practice preferences.^{19,23,24}

About a third of respondents were willing to work in rural area on graduation in this study. Their major reasons for willing to work in rural area includes; rendering health services to the poor, to gain experience as well as for greater career opportunities. However the major reasons for unwilling to work in rural area includes; poor amenities, low standard of living and low educational opportunities for their children. Concerning opinion on why doctors are unwilling to work in rural area, major reasons were; poor infrastructure, poor living conditions, poor schooling for their children and low chances of professional growth. Similar studies carried out in Nepal³² Croatia²⁷ New Zealand^{28,28} and Ghana²⁵ equally showed that majority of the medical students said they would like to practice in urban areas.³² However, studies in Croatia²⁷ and New Zealand showed that respondents were more likely to go if an incentive scheme were offered.^{27,28,29} Also in Uganda where majority of the respondents completed their high school from urban areas and the majority had minimal exposure to rural health facilities, yet most of them were willing to work in rural areas.³³

From our study, educational level of their parents and their gender has no influence on willing to work in rural areas. In contrast other studies differ with this finding. Students whose parents were educationally well qualified were significantly less likely to practice in rural areas.^{35,37} Likewise, studies among health staff revealed that women are less likely to accept positions in remotes areas

due to varying family reasons. These includes; willingness to live where their husbands work, difficulties convincing their husbands to follow them to rural areas and conviction that their children will have better education in the urban areas.^{34,42.}

Fathers being farmers were identified as a determinant of willingness to work in rural area on graduation. This can be attributed to the fact that majority of the respondents reside in urban areas. Personal links to rural areas can be an important determining factor in the willingness to work in rural areas.²³ To have parents residing in a rural area is without a doubt the largest influence on a medical student's willingness to accept a job in a rural area. Among Tanzanian students, it was shown that when the parents reside in rural district, the probability that their child will accept a job in a rural district rises by 50%.³⁴ Similar studies done in Addis Ababa, Ethiopia documented a similar finding.²⁰ This can be explained by familiarity that rural background students have with rural setting and cultural norms. In contrast, is the case in a Ugandan study, where it was found that previous exposure to rural life did not seem to be related to a choice on working in rural areas³³

In a Hungarian study, the factors which were declared as influencing the choice of workplace were; salary, professional standards, working environment, workload, size of town and access to skilled colleagues and good equipment.²⁶ In Addis Ababa, age was a positive factor of desire to practice in rural settlements. The odds to initially practice medicine in rural areas of the country were 1.8 times higher among older students (aged 20 or more years) compared to those 19 or younger students. Only 18% of students aged less than 20 compared to 36% of those aged 20 or more would like to initially practice medicine in rural areas.²⁰ This may be related to the fact most of their counterparts in other courses earn more in the labour field. Poor professional growth may equally discourage them from working in rural area. This is in keeping with the studies done in Hungary where majority of the young doctors see their future in major cities and in specialized hospitals for professional growth.²⁶

This study showed that very few (3.0%) were satisfied on current status of rural health service.

However, about two third stated that medical training for rural practice were adequate which is good and commendable. Study in Tanzania had a contrasting finding. It was reported that the training programs do not seem to adequately prepare aspiring medical doctor for rural health care challenges, that is to say that their clinical curriculum is rural-unfriendly.³⁴ Well-supervised and supported rural placements in which students experience the rewards of rural practice may help to persuade students who are largely unfamiliar with rural life.²⁵ Another study indicated an association between perceived quality of the rural experience and increased interest in rural health.³⁷

CONCLUSION

Perception on working in rural areas was generally good, while the willingness to work in rural areas was poor. Their major reasons for willing to work in rural area includes; rendering health services to the poor and to gain experience. However, the major reasons for not willing to work in rural area includes; low standard of living and poor educational opportunities for their children, Fathers being farmers was identified as a determinant of willingness to work in rural area on graduation. This implies that over time, getting qualified medical doctors to work in rural areas will be difficult and pose a major threat to health indices of the country. Efforts should be made to lure these young ones to practice in rural areas.

REFERENCES

1. World Health Organization: Working Together for Health: The World Health Report 2006. Geneva: World Health Organization; 2006.
2. Kinfu Y, Poz MRD, Mercer H, Evans DB: The health worker shortage in Africa: are enough physicians and nurses being trained? *Bull World Health Organ* 2009; 87:225-230.
3. Health workforce country profile for Nigeria, October 2008 Available at: www.who.int/workforcealliance/countries/Nigeria accessed 12/12/17
4. Ebuehi OM, Cambell PC. Attraction and retention of qualified health workers to rural areas in Nigeria: a case study of four LGAs in Ogun State, Nigeria. *Rural and Remote Health* 2011;11(1):1515
5. Uneke C, Ogbonna A, Ezeoha A Oyibo P, Onwe F Ngwu B Innovative Health Research Group. The Nigeria health sector and human resource challenges. *The Internet Journal of Health* 2008; 8(1). (Online) 2008. Available at: <https://print.ispub.com>
6. Chankova S, Nguyen H, Chipanta D, Kombe G, Onoja A, Ogungbemi K. Catalyzing human resources mobilization: a look at the situation in Nigeria. In, *Proceedings, Global Health Council Annual Conference*; 30 May 2007; Washington DC, 2007. (Accessed 14/11/18).
7. Awofeso N. Improving health workforce recruitment and retention in rural and remote regions of Nigeria. *Rural and remote Health* 2010;10:13-19
8. Koch K, Miksch A, Schürmann C, Joos S, Sawicki PT: The German health care system in international comparison: the primary care physicians' perspective. *Dtsch Arztebl Int* 2011; 108(15): 255-61.
9. Dussault G, Franceschini MC: Not enough there, too many here: understanding geographical imbalances in the distribution of the health workforce. *Human Resources for Health* 2006, 4:12.
10. Leon B: Maldistribution of the medical workforce in Tanzania: Predictor of willingness for rural medical practice among Tanzanian final year medical students. University of Dar es Salaam 2005.
11. Shankar PR, Thapa PT Students perception about working in rural Nepal after graduation: a study among first- and second-year medical students. *Human Resources for Health*. 2012, 10:27
12. Polasek O, Kolcic I, Dzakula A, Bagat M: Internship workplace preferences of final year medical students at Zagreb University Medical School, Croatia: all roads lead to Zagreb. *Human Resources for Health* 2006, 4:7.
13. Peach HG. Comparison of rural and non-rural students undertaking a voluntary rural placement in the early years of a medical course. *Medical Education* 2000, 34:231-233.
14. Curran V, Rourke J: The role of medical education in the recruitment and retention of rural physicians. *Medical Teacher* 2004, 26:265-272.
15. Agyei-Baffour P, Kotha SR, Johnson JC, Gyakobo M, Asabir K, Janet 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 Health Education*. 2011;11-56.
16. Kaye DK, Mwanika A, Sekimpi P, Tugumisirize J, Sewankambo N. Perceptions of newly admitted undergraduate medical students on experiential training on community placements and working in rural areas of Uganda *BMC Medical Education* 2010, 10:47
17. McGrail MR, Humphreys JS, Joyce CM: Nature of association between rural background and practice location: A comparison of general practitioners and specialists. *BMC Health Serv Res* 2011, 11:63.
18. Shannon CK, Baker H, Jackson J, Roy A, Heady H, Gunel E. Evaluation of a required statewide interdisciplinary rural health education program:

- student attitudes, career intents and perceived quality. *Rural and Remote Health* 2005;5: 405.
19. Leon BK, Kolstad R. Wrong schools or wrong students? The potential role of medical education in regional imbalances of the health workforce in the United Republic of Tanzania. *Human Resources for Health* 2010;8:3
 20. Couper ID, De Vries E, Reid S, Fish T, Marais BJ. A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas. *Rural Remote Health*. 2009;9:1060.
 21. Deressa and Azazh: Attitudes of undergraduate medical students of Addis Ababa University towards medical practice and migration, Ethiopia. *BMC Medical Education*, 2012 12:68.
 22. Girasek E, Eke E, Szócska M: Analysis of a survey on young doctors' willingness to work in rural Hungary. *Hum Resour Heal* 2010, 8:13