Original Article

CHARACTERISTICS OF MEDICAL DOCTORS WORKING IN PUBLIC HEALTHCARE INSTITUTIONS IN A SOUTHERN NIGERIAN STATE

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ABSTRACT

OBJECTIVE: This study assessed the characteristics of medical doctors working in public healthcare institutions and examined differences in some of the characteristics by geographical (urban versus rural) location.

METHODS: A cross-sectional study of doctors working in public healthcare institutions using data obtained from 3 centres in Bayelsa, Nigeria.

RESULTS: Three-quarters (75.4%) of the 280 medical doctors were males. Most of the doctors (68.6%) were working at tertiary healthcare level, 16.1% at primary and 15.4% at secondary healthcare levels. In terms of their professional positions, there were more medical officers (34.5%) relative to the other cadres while 17.2% were consultants. When their places of practice were dichotomised into rural and urban settings, 88.2% were practising in urban settings. A higher proportion of the 69 female doctors were practising in urban settings compared to rural settings (26.7% versus 9.1% respectively, *P*=0.027). There was a statistically significant relationship between residency status and place of practice (*P*=0.001). Specialists (i.e. doctors who have completed residency training) were more likely to practice in urban (19.2%) than in rural settings (3.3%).

CONCLUSION: Only a quarter of doctors in this study were females. There seemed to be more doctors at tertiary level of care and in urban areas. These findings suggest that there may be a shortage of female doctors, and that there may be unmet personnel needs at primary and secondary healthcare levels and in rural areas.

KEYWORDS: Health services, Human resources for heath, Health workforce, Geographical Distribution, Medical Doctors.

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INTRODUCTION

Effective health care delivery is dependent on the available health man power and the geographical distribution of health workers.[1] The WHO reports that though there are over 59 million health workers globally, their distribution is uneven between and within nations with fewer health workers in Low and middle Income countries.[2] The WHO report on health workforce suggests that the 7.2million shortage in health care workers may reach 12.9 million in 2035 if measures are not taken to check the trend. In Nigeria, there is an uneven distribution of physicians and healthcare in the regions, the states and local government areas.[3]

It has been observed that areas where health care needs are greatest have the least number of health workers.[2] This demand and supply difference in health care needs and resources is typified by urban-rural disparity in health care resources with most health centres concentrated in urban areas. Studies have noted that tertiary health institutions are more likely to be located in urban areas than rural areas.[3,4] The reasons for this concentration of health resources have been attributed to physician preference for areas with

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higher employment opportunities, greater likelihood of career advancement and availability of social needs for the family.[4] In addition, the salaries and emoluments of workers in urban areas are higher than those in rural areas[3] and women and younger doctors have a predilection for urban areas because of the perceived diversity in opportunities.[4,5]

This geographical maldistribution has several health implications and consequences. This is aptly captured by a recent WHO report entitled "No health without a workforce".[1] Chen and colleagues suggest that the availability of human health resources in an area can positively impact the health indices of the population.[6] On the other hand, over-concentration of health workforce in an area can lead to unemployment and underutilization of health resources.[4,7,8] When coupled with health workers migration from low and middle-income countries to high-income countries, maldistribution might impair health care delivery.[9,10]

Bayelsa State has a dearth of health manpower.[11] It is essential to explore the distribution of doctors in order to identify areas of need. We are not aware of any previous study on this topic in Bayelsa state. This study aimed to assess the characteristics of medical doctors working in public healthcare institutions and to examine if there are differences in some of the characteristics based upon geographical (urban versus rural) location.

METHODS

Study site

This study took place in Bayelsa State in southern Nigeria. The State has a population of about 1,704,515 million people. 12 Medical doctors working in the State's public healthcare sector are employed by three institutions namely Federal Medical Centre (FMC) Yenagoa, Niger Delta University Teaching Hospital (NDUTH) Okolobiri, and the State Hospital Management Board (HMB), Ministry of Health Yenagoa.

Study design

A cross-sectional design was used for this research study which took place during June–August 2015. Data were extracted from the register of medical doctors at NDUTH and at HMB. Additionally, self-completed questionnaires were used to collect data from medical doctors at FMC and the questions were focused on sociodemographic details, medical education/experience, and current employment.

Statistical analyses

Statistical package for the social sciences (SPSS) version 20 for windows was used for data analyses. Only variables that were common across the three datasets (from FMC, NDUTH and HMB) were included in the statistical analyses for this paper. These variables included gender, professional position, level of care, town of practice, type of practice setting (i.e. urban versus rural), and fellowship status. Study results were presented as frequencies and proportions. Differences in some of the characteristics based on geographic location (urban versus rural setting) were tested using Chi-square test, and the level of significance was set at P=0.05.

Urban setting was defined as a doctor's place of practice located in Yenagoa (i.e the State capital) and the surrounding towns. Rural setting was defined as a doctor's place of practice located in communities outside Yenagoa local government and in the riverine areas. Informed consent was obtained from the doctors in FMC. Ethical approval was not required for this study.

RESULTS

Sample characteristics

Data for 91 medical doctors from FMC, 100 from NDUTH, and 89 from HMB were analysed. Characteristics of these 280 doctors are presented in Table 1. Three-quarters of them (75.4%) were men. Over two-thirds of the doctors (68.6%) were working/providing care at tertiary healthcare level. In terms of professional level/position, there were more medical officers (34.5%) relative to the other cadres while 17.2% were consultants (i.e. specialists who have undergone residency training).

A greater proportion of the doctors (61.8%) were not doing residency training. Details about medical specialties of those doing residency training have been discussed in a separate paper.13 Based upon our categorisation of geographical location, most of the doctors (88.2%) were practicing in an urban setting.

Table 1: Characteristics of medical doctors working in public healthcare institutions

Characteristic	Medical doctors (N = 280)
Gender, *n (%)*	
Males	211 (75.4)
Females	69 (24.6)
Professional position, *n (%)*	
House officer	70 (26.2)
Medical officer	92 (34.5)
Senior medical officer	6 (2.2)
Registrar	41 (15.4)
Senior registrar	7 (2.6)
Consultant	46 (17.2)
Chief medical officer	5 (1.9)
(Missing data)	13 (-)
Level of care, *n (%)*	
Primary care	45 (16.1)
Secondary care	43 (15.4)
Tertiary care	192 (68.6)
Practice setting, *n (%)**	
Rural area	33 (11.8)
Urban area	247 (88.2)
Residency status, *n (%)*	
Completed residency	48 (17.5)
Currently doing residency	57 (20.7)
Not doing residency	170 (61.8)
(Missing data)	5 (-)

**Geographical location of the place of practice.*
Specialist training.

Variation by geographical location

Further analyses of doctors' characteristics revealed some statistically significant differences based on geographical location of the place of practice (Table 2). Of note was the distribution of the 69 female medical doctors. A higher proportion of the females were practising in urban settings compared to rural ones (26.7% versus 9.1% respectively, P=0.027).

There was a relationship between residency status and place of practice (P=0.001). Doctors who have completed their residency training were more likely to practice in urban (19.2%) than rural settings (3.3%). Those not doing residency training were far more common in rural settings (93.3%) compared to urban settings (58.0%).

Table 2: Differences in characteristics by geographical location of place of medical practice

	Geographical location of place of practice			
Characteristic	Rural area (n = 33) *n (%)*	Urban area (n = 247) *n (%)*	P-value*	Total (n = 280) *n (%)*
Gender				
Males	30 (90.9)	181 (73.3)	0.027	211 (75.4)
Females	3 (9.1)	66 (26.7)		69 (24.6)
Residency status				
Completed residency	1 (3.3)	47 (19.2)	0.001	48 (17.5)
Currently doing residency	1 (3.3)	56 (22.9)		57 (20.7)
Not doing residency	28 (93.3)	142 (58.0)		170 (61.8)
(Missing data)	3 (-)	2 (-)		5 (-)

**P-value for Chi-squared test.*
Specialist training.

DISCUSSION

In this study, we analysed data of 280 medical doctors working in public healthcare institutions in Bayelsa State in southern Nigerian. Our study revealed that 88.2% of the doctors in public institutions were practicing in an urban setting and 68.6% of the doctors were employed in a tertiary health facility. These findings are worrisome because 60-70% of Nigerians reside in rural areas[11,14] whereas this study revealed that only 11.8% of doctors work in rural areas. Bayelsa State has many rural riverine communities with high unmet need for health care services.[11] Our study results re-echoed the need to pay more attention to primary health care and the need for more health human resources in the rural areas.[3,14] This is in sharp contrast to a study conducted in Lebanon which found that 49% of the physicians were practising in urban areas.[8]

This study demonstrated a statistically significant association between gender and practice setting. Only 3 out of the 69 female doctors in the study were practicing in a rural setting. This finding is supported by results from a previous study conducted in the US which demonstrated preference of female physicians for urban areas,[5] possibly due to family obligations, career and other opportunities in urban areas. In general, only one-quarter (24.6%) of the total participants were females and this suggests that there may be a shortage of female physicians in the State. It could also suggest difficulty in attracting females to medical practice. This is a concern given that data

from this same study population revealed a gender imbalance in medical specialty and an absence of female doctors in 14 specialties.[13]

Our study also demonstrated an association between completion of residency training and practice location. Specialists (i.e. doctors who have completed their residency training) were more likely to practice in urban than in rural settings. Previous studies have shown that specialty and specialization choices are mediated by socioeconomic factors and personal interest.[15,18] It could be inferred that specialist doctors' desire for higher remuneration and better work conditions would be easily accomplished in an urban setting. Human capital flight on account of disparity in work conditions have been reported in studies in Nigeria.[19] Hence, there is a need to improve on training and personal needs of rural health practitioners to motivate sustained and continuous practice in rural settings.[14]

Implications for policy and future research

Primary health care development is essential in Nigeria and even more in hard to rich and riverine terrains of Bayelsa.[11] Although it is impossible to legislate on doctors' migration,[17,19] positive government investment in healthcare and encouragement of rural health care practice has potentials to improve health care delivery and achievement of the sustainable development goals.[20] Inequality in urban–rural human health resources development has negative consequences for health care. Conscious and determined efforts are essential to eliminate this disparity in health services between rural and urban settings. Hence, there is a need for further research to uncover unmet healthcare personnel needs in the rural areas. Results of such studies will provide useful data to relevant government agencies and policy makers to formulate appropriate solutions.

Strengths and weaknesses

This study is the first of its kind in Bayelsa. Its use of data from all the public health institutions ensured adequate sampling of the study populations. Our major limitation was reliance on data records for the doctors in HMB and NDUTH. Also, because our study concentrated on doctors in public health institutions, doctors involved in private practice in the region may have been missed.

CONCLUSION

Maldistribution of medical doctors interferes with effective and efficient healthcare delivery. The inequality in the distribution of urban-rural of doctors and specialists in this study has grave implications for comprehensive health care for rural dwellers in Bayelsa state. Primary and secondary levels of care ensure delivery of health care at the grassroots. There is need for health system strengthening that takes into consideration the personnel needs of doctors and other health personnel that work in rural areas to discourage migration of health care personnel to urban areas. It is also worrisome that only a quarter of the doctors in the state are female. More efforts are required to attract more females to medical practice and especially in the rural areas.

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Declaration of Conflict of Interest

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