

GENDER VARIATIONS IN SPECIALTIES AMONG MEDICAL DOCTORS WORKING IN PUBLIC HEALTHCARE INSTITUTIONS IN BAYELSA STATE, NIGERIA.

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ABSTRACT

BACKGROUND: Gender variations exist in the choice of specialties among doctors globally. This variation is of public health importance as it affects the distribution of doctors in public health institutions and patient care. In Bayelsa, Nigeria, no such study had been undertaken. This study aimed to examine gender variations in specialties among medical doctors working in public healthcare institutions in Bayelsa State.

METHODS: Cross-sectional study design was adopted for this study. Information about doctors working in public healthcare institutions in Bayelsa were collected via data extraction from the register of doctors at Niger Delta University Teaching Hospital (NDUTH) and at Hospital Management Board (HMB) of State Ministry of Health, and with self-completed questionnaires from doctors at Federal Medical Centre (FMC). In this paper, statistical analyses were restricted to data from FMC (n=91) and NDUTH (n=100) because they have multiple specialties. All available data were analyzed by gender and data analyses were carried out using SPSS statistical software.

RESULTS: Out of the 191 doctors included in the analysis, 135 (70.7%) were males. The median age was 32 years for male doctors and 29 years for female doctors. The top three specialty choices for males were obstetrics and gynaecology (14.8%), internal medicine (11.1%) and surgery (8.9%). For female doctors, pediatrics was the topmost specialty (25%) followed by obstetrics and gynaecology (10.7%) and internal medicine (8.9%). There were no female doctors in 14 specialties. Female doctors had higher proportions of house officers compared to males (45.5% versus 32.3% respectively). Conversely, male doctors had higher proportions of consultants/specialists than females (24.1% versus 9.1% respectively).

CONCLUSION: Specialty distribution of doctors in Bayelsa is gendered and some specialties appear not to attract female doctors. These findings call for further studies to investigate the factors responsible for this gender variation, and to identify and address any barriers.

Key words: Gender variation, Specialties, Doctors, Public healthcare, Health workforce

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INTRODUCTION

Globally, medical training is perhaps the toughest and longest of all university degrees. (Berman, 2015) In some countries the pathway is through basic sciences before some years in clinical sciences; while in some countries it is a straight course. (Eze, Okoye, Maduka-Okafor, & Aguwa, 2011; Jain, 2013) The duration of medical training ranges from six to eight years and varies from school to school, and individual or institution specific factors could take it up to twelve years.

This long duration of basic medical training has severe impact on the decision to undertake and the zeal to complete specialty courses. (Berman, 2015; Madu, Ubesie, Madu, Nonyelu, & Ibegbulam, 2015) In Nigeria, there are two available pathways to post graduate specialty training namely the National Postgraduate Medical College of Nigeria and the West African College of Physicians/Surgeons. (Eze et al., 2011; Madu et al., 2015) Presently, the greatest challenge to specialty program is scarcity of available training centres for residency training as it is popularly called. The residency training last from four to six years but this could vary (Eze et al., 2011; Madu et al., 2015) Unlike the basic medical training that could be sought via private institutions, there is no private institution

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offering postgraduate medical training in Nigeria.

This tortuous path of training have various implications for doctors in public health care system. (Berman, 2015; Madu et al., 2015) The specialization program around the world is strongly gendered because apart from the specialty specific challenges, the above system specific challenges inform the decision of doctors to opt for specialty training. (Gjerberg, 2002; Riska, 2001) Increasingly, more doctors are opting out of specialty training and this has a huge impact on the quality of care at all levels of health care in the country. (Berman, 2015; Eze et al., 2011; Gjerberg, 2002; Jain, 2013; Madu et al., 2015; Riska, 2001) Cultural and socioeconomic factors as well as gender discrimination affect specialty choices by female doctors. (Gjerberg, 2003; Jolly et al., 2014; McMurray et al., 2000) However, practical factors like family and career inform the choices in the face of overwhelming inimical conditions. (Doescher, Ellsbury, & Hart, 2000; Elston, 2009; Gjerberg, 2003) Studies suggest that men often prefer surgery and related specialities (Madu et al., 2015; Zulkifli & Rogayah, 1998) while women prefer family medicine, public health and anesthesiology (Zulkifli & Rogayah, 1998).

The aim of this study is to examine the gender variations in specialties among medical doctors working in public healthcare institutions in Bayelsa State. Presently, no similar study exists in the state or region. This study is essential to inform future public health policies for both postgraduate medical training and public health care in Bayelsa and Nigeria.

Methodology

Study Design and Setting

This cross-sectional study was carried out using structured self-administered questionnaire and data extraction from registers of the doctors. The study sites were Federal Medical Centre (FMC), Yenagoa; Niger Delta University Teaching Hospital (NDUTH), Okolobiri and the Hospital Management Board (HMB), Bayelsa State Ministry of Health, Yenagoa. These institutions employ doctors in the public healthcare sector in Bayelsa State. Bayelsa state is located in the Niger Delta region of Nigeria.

Data Collection

Data was collected between June and August 2015. The doctors at FMC Yenagoa (n=91) completed self-administered questionnaires (98% return rate) while data was extracted from the registers of the doctors in NDUTH (n=100) and HMB (n=89) into an extraction table developed from the questionnaire. In order to avoid duplication, doctors originally employed by the HMB but on secondment at the NDUTH were captured under NDUTH (since that was their current place of

work). The questionnaire covered three major areas namely background information, medical education, and years of experience in medical practice and current employment. The background information consisted of demographic variables including age, gender and marital status. The medical education consisted of questions on year of graduation from medical school and fellowship/residency status. The current employment covered practice setting (urban and rural), level of care, position, medical specialty and duration of service. Informed consent was obtained from the doctors in FMC. Ethical approval was not required for this study.

Data Analysis

In this paper, statistical analyses were only restricted to data from FMC and NDUTH because they have multiple specialties. Data were analyzed by gender and data analyses were carried out using Statistical Package for Social Sciences (SPSS) statistical software version 17 for windows. Comparisons were made between male and female doctors. Fischer's exact test was used for categorical variables, and Mann-Whitney test for continuous variable were used to test for gender differences in doctors' characteristics. However, gender differences in specialties were only analysed as percentages/proportions due to too many empty cells.

Results

Characteristics of the Medical Doctors

Out of the 191 doctors included in the analysis, 135(70.7%) were males while 56(29.3%) were females and the median age of study population was 31 years. (Table 1) The female doctors were younger than males with a median age of 29 years ($p<0.001$). Amongst the doctors who were married, 63.1% were males while 44.6% were females. Conversely, amongst those who were single, 53.6% were females while only 36.9% were males and an association was observed between marital status and gender ($p=0.017$).

There were more males than females in all the professional levels recorded in Table 1 and there was statistically significant differences by gender ($p=0.044$). Female doctors had higher proportions of house officers compared to males (45.5% versus 32.3% respectively). Conversely, male doctors had higher proportions of consultants than females (24.1% versus 9.1% respectively). There were also statistically significant differences by fellowship status ($p=0.039$). Female doctors had higher proportions of those not doing residency training compared to male doctors (56.4% versus 47.4% respectively).

Table 1: Characteristics of the medical doctors by gender (N = 191)

Variable	Gender		P-value*	Total (n = 191)
	Males (n = 135)	Females (n = 56)		
Age in years, mean (median)	33.7 (32.0)	29.6 (29.0)	<0.001	32.3 (31.0)
Marital status, n (%)			0.017	
Married	82 (63.1)	25 (44.6)		107 (57.5)
Single	48 (36.9)	30 (53.6)		78 (41.9)
Separated/divorced	-	-		-
Widow/widower	-	1 (1.8)		1 (0.5)
(Missing data)	5 (-)	-		5 (-)
Professional level, n (%)			0.044	
Medical officer	22 (16.5)	7 (12.7)		29 (15.4)
House officer	43 (32.3)	25 (45.5)		68 (36.2)
Senior medical officer	6 (4.5)	0 (0)		6 (3.2)
Registrar	26 (19.5)	15 (27.3)		41 (21.8)
Senior registrar	4 (3.0)	3 (5.5)		7 (3.7)
Consultant	32 (24.1)	5 (9.1)		37 (19.7)
(Missing data)	2 (-)	1 (-)		3 (-)
Fellowship status, n (%)			0.039	
Completed residency	34 (25.2)	5 (9.1)		39 (20.5)
Currently doing residency	37 (27.4)	19 (34.5)		56 (29.5)
Not doing residency	64 (47.4)	31 (56.4)		95 (50.0)
(Missing data)	-	1 (-)		1 (-)

*Fischer's Exact test for categorical variables, and Mann-Whitney test for continuous variable.

Distribution by Specialties

As shown in Table 2, obstetrics and gynecology specialty had the greatest number (n=20, 14.8%) of male doctors followed by Internal Medicine (n=15, 11.1%). Distribution amongst the female doctors is shown in Table 2. The pediatrics specialty had the greatest number (n=14, 25.0%) of doctors followed by Obstetrics and gynecology (n=6, 10.7%). There were no female doctors in the following 14 specialties namely anesthesia, neurology, psychiatry, dentistry, dental surgery, dermatology, orthopedics, chemical pathology, family medicine, hematology, histopathology, HIV medicine, medical microbiology and pediatric surgery (Tables 2). There were 39 male house officers (interns) and 17 female house officers. They were classified as a separate category because house officers/interns rotate through different specialties.

Table 2: Specialties of medical doctors by gender

Specialty	Males N = 135 n (%)	Females N = 56 n (%)	All N = 191 n (%)
NA*	39 (28.9)	17 (30.4)	56 (29.3)
Obstetrics and gynecology	20 (14.8)	6 (10.7)	26 (13.6)
Internal medicine	15 (11.1)	5 (8.9)	20 (10.5)
Surgery	12 (8.9)	3 (5.4)	15 (7.9)
General medicine	8 (5.9)	4 (7.1)	12 (6.3)
Community medicine	6 (4.4)	3 (5.4)	9 (4.7)
Pediatrics	6 (4.4)	14 (25.0)	20 (10.5)
Anesthesia	5 (3.7)	-	5 (2.6)
Ophthalmology	4 (3.0)	2 (3.6)	6 (3.1)
Neurology	3 (2.2)	-	3 (1.6)
Psychiatry	3 (2.2)	-	3 (1.6)
Dentistry	2 (1.5)	-	2 (1.0)
Dermatology	2 (1.5)	-	2 (1.0)
Orthopedics	2 (1.5)	-	2 (1.0)
Chemical pathology	1 (0.7)	-	1 (0.5)
Dental surgery	1 (0.7)	-	1 (0.5)
Family medicine	1 (0.7)	-	1 (0.5)
Hematology	1 (0.7)	-	1 (0.5)
Histopathology	1 (0.7)	-	1 (0.5)
HIV medicine	1 (0.7)	-	1 (0.5)
Medical microbiology	1 (0.7)	-	1 (0.5)
Pediatric surgery	1 (0.7)	-	1 (0.5)
Neuropsychiatry	-	1 (1.8)	1 (0.5)
Oral and maxillofacial surgery	-	1 (1.8)	1 (0.5)

*NA = not applicable because they are house officers/interns

DISCUSSION

Our study revealed that majority (70.7%) of doctors in public healthcare institutions in Bayelsa are males. It is not surprising that there were more males in all the professional levels recorded in the study. This preponderance of males in the medical profession is not new (Gjerberg, 2001, 2003); and whereas a change in this trend has been recorded in developed countries like United Kingdom where women constitute 57% of those accepted into medical school (Elston, 2009), it is different in developing countries like Nigeria where more males enrol into medical schools (Eze et al., 2011; Madu et al., 2015).

Females had higher proportions of house officers while males had higher proportions of consultants. The top three specialist choices for males were obstetrics and gynecology, internal medicine and surgery while for females it was pediatrics, obstetrics and gynecology and internal medicine. From this study result, it is not possible to know why some specialties appeared to be more popular than others. It is possible that these specialties were more represented than others because they were the ones that had accreditation for residency training in the institutions where the study was

conducted. Researchers have previously reported that accreditation of training centres is a major limitation to postgraduate medical education in Bayelsa (McFubara, Edoni, & Ezonbodor-Akwagbe, 2012). Specialty choices might have been to fit into what is available due to accreditation challenges. Perhaps, further research studies might be necessary to provide insights into the reasons for specialty choices.

The study methodology precludes an explanation for gendered specialty preferences or pattern but several studies have offered personal interests and socio-cultural factors as explanations for the gendered pattern of specialty preferences (Elston, 2009; Eze et al., 2011; Gjerberg, 2001; Jain; Pelley, Danoff, Cooper, & Becker, 2015; Subba et al., 2012). Gender difference exist in the personal interest and career advancement desires of male and female doctors and these continue to influence their specialty preferences; with more men opting for surgical specialties and women dominating in the more flexible specialties (pediatrics, endocrine medicine and public health) on account of marital and family choices (Gjerberg, 2003; Jolly et al., 2014; Makama, Garba, & Ameh, 2012; McMurray et al., 2000; Pelley et al., 2015).

According to Gjerberg, the higher the number of children a female doctor has, the less likely she is to specialize (Gjerberg, 2003). It is interesting to note that in spite of more female enrolment and acceptance into medical schools in UK, females constitute only 28% of female consultants in National Health Scheme (NHS) (Elston, 2009). Eze and colleagues in Nigeria noted that women are underrepresented in all specialities. (Eze et al., 2011) Similarly, a study of two cohorts of Norwegian doctors noted that more men than women continue to specialize and in the surgical specialties (Gjerberg, 2001). In this study there were no females in 14 specialties, and this points to a huge gender imbalance in specialty distribution of doctors in Bayelsa.

The gendered pattern of specialist choice is hence not restricted to the developing countries. Although many studies identified personal interest and choice as responsible, this personal interest is not free from social factors. (Gjerberg, 2003) The highly unpredictable and rigid medical and residency training in Nigeria makes it difficult for women to combine career and family life (Eze et al., 2011; Madu et al., 2015; Makama et al., 2012). The unpredictable work schedule of the emergency medicine specialty in the UK is known to discourage women from that specialty (Elston, 2009) while a study in US noted that women dominated the endocrinology specialty on account of the need to maintain work-life balance (Pelley et al., 2015). An analysis of US census survey data noted that female physicians had 50%

higher chances of divorce compared to their male counterparts and that divorce correlated with longer working hours. (Ly, Seabury, & Jena, 2015) It is obvious that specialty choices are influenced by varying factors and occur at varying periods in the medical education, internship and after internship (Eze et al., 2011; Jain, 2013). A study of interns in India noted that the lower preference for the surgical specialties may be due to fewer female role models (Jain, 2013). Madu and colleagues noted that male preponderance in the surgical specialties may continue due to the zest for better prospects and higher societal expectations from men (Madu et al., 2015).

This study recorded an association between gender and marital status ($p=0.017$), professional level (0.044) and fellowship status ($p=0.039$). It is pertinent to note that more than half (53.6%) of the female physicians in the studied population were single compared to only 36.9% of the males. Medical training and specialization exert great pressure on both male and female physicians. The modal age of 31-40 years noted in a cohort of pre-residency medical graduates in Nigeria is rather worrisome (Eze et al., 2011) and suggests a long duration of training in medical school which may affect interest in specialist medical training. Increasingly, country specific factors lead to interruption of both medical and residency training (Eze et al., 2011; Madu et al., 2015; Makama et al., 2012). Hence, age related factors and financial challenges also affect the choice in medical specialty as physicians both male and female are constrained by factors to play catch up or find a faster route to financial freedom or professional satisfaction.

CONCLUSION AND IMPLICATIONS FOR FUTURE RESEARCH

The pattern of specialties of doctors in public healthcare institutions in Bayelsa is gendered. As demonstrated in previous studies, male and female doctors in different parts of the world tend to have specialty preferences on account of 'socially mediated' personal interest, training and country specific factors (Gjerberg, 2002; Riska, 2001). The choices have huge implications as so many other specialties perceived to be less lucrative or very demanding would continue to experience shortages in available man power to attend to the health care needs of people. In spite of the design limitations of this study, it provides an idea of the distribution of specialties in Bayelsa and hints of the need for more longitudinal studies to identify the predictors of specialty choices and also qualitative studies to understand the reasons for the choices. Such studies will provide useful data to assist governments, medical training bodies and heads of public healthcare institutions to design interventions to address the identified problems.

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