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Demography and Medical Education among Nigerian Final Year Medical Students-Implication for Regional and Human Resource Development

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Abstract

Objective: This study examined the influence of demography such as gender, age, marital status and religion on medical education among final year medical students in different geopolitical zones of Nigeria.

Methods: This is a cross sectional descriptive study that drew a total of seven hundred and fifty seven (757) final year medical students from ten (10) randomly selected fully accredited medical schools out of a total of twenty seven (27) fully accredited medical schools in Nigeria. Demographic information was obtained from the medical students following completion of their final year postings.

Results: The total population of female final year medical students was 300 (39.6%) and 457 (60.4%) for males. The minimum and maximum ages were 19 and 42 years respectively with a mean age of 25.30 ± 2.90 year. Seventy (9.2%) of the 757 final year medical students were married, while 687 (90.8%) were still single. The religion distribution revealed 181 (23.9%) of the final year medical students to be practicing Islam. Five hundred and seventy five (76.0%) of these students practice Christianity and only 1 (0.1%) of the students practices traditional religion.

Conclusion: The findings have implication for policy formulation to reduce inequalities observed in medical education in Nigeria.

Keywords: Demography; Medical education; Nigeria

Essentials

Demography had influence on medical education among Nigerian final year medical students population.

Gender inequality is observed in medical education among Nigerian final year medical students population.

Individuals who practice Islam and traditional religions as compared to Christianity are less represented in the population of final year medical students.

The data from this study could guide in policy formulation to reduce inequalities that is observed in medical education among Nigerian medical students.

Introduction

Nigeria is a country in Sub-Saharan Africa, occupying the West Africa region. It has an estimated population of over 160,000,000 [1]. The predominant tribes of Hausa-Fulani, Yoruba and Igbo occupied the North-East/North-West, South West and South East regions respectively [1]. The map of Nigeria showing distribution of the three major ethnic groups without the minority ethnic groups constituents is shown in Figure 1.
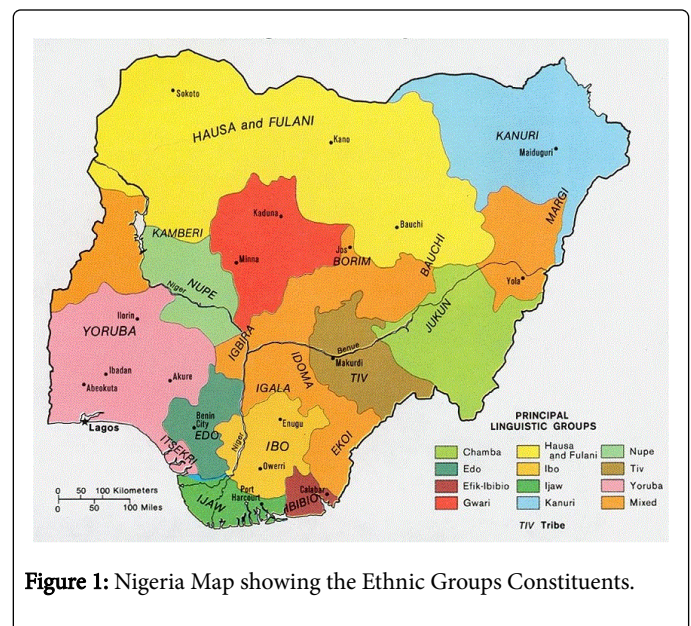

Figure 1: Nigeria Map showing the Ethnic Groups Constituents.

Nigeria consists of thirty six (36) States and a Federal Capital Territory (FCT), Abuja. For ease of regional and political administration, Nigeria is divided into six (6) geopolitical zones or regions. These geopolitical regions include the North-East (Yobe, Borno, Bauchi, Gombe, Adamawa and Taraba States). This region is

presently affected by 'Boko Haram' Insurgency and temporary closure of schools providing western education from primary to tertiary level is a common finding. How this 'Boko Haram' concept literally translated to mean "western education is evil", will affect medical education and other forms of western education in the next few years in this region is unclear. Other geopolitical regions are: North Central (Niger, Nasarawa, Kwara, Kogi, Benue, Plateau & FCT); North West (Sokoto, Katsina, Jigawa, Kano, Zamfara, Kaduna & Kebbi States); South East (Anambra, Abia, Enugu, Ebonyi, & Imo States); South-South (Edo, Delta, Cross River, Akwa Ibom, Rivers & Bayelsa States); South West (Oyo, Osun, Ekiti, Ogun, Ondo & Lagos States). Figure 2 showed the Map of Nigeria with different geopolitical zones/regions of the country.

Figure 2: Nigerian Map showing Six Geopolitical Regions, Thirty Six States and One FCT.
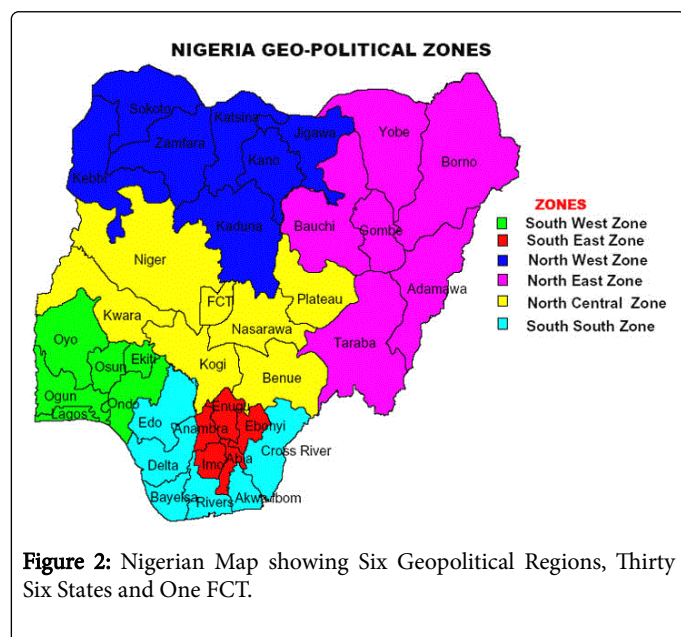
Nigeria population, though diverse in nature, in terms of ethnicity, culture, religion and languages, it is divided into predominantly Islamic Northern region, and predominantly Christian Southern region with intersperse of few traditional religion practitioners cutting across the two regions [1].

Marriage in traditional Islamic societies has been known to be early in life, especially among women whom are often married in their teens [2,3]. This is often a contrast among individuals and societies that practice Christianity and some other religions. Early marriage has also been known to put a constraint on education and economic development among young women [2,3].

Gender inequality characterized many professional practices worldwide, with a wider inequality gap often observed in most African and traditional Islamic countries [1]. The gender inequality is also observed in medical profession in most parts of the world [6], including African countries where the inequality gap is likely to be wider.

It is unclear how demography presently influences medical education in Nigeria and most Sub-Saharan African countries. This study examined the influence of demography such as gender, age, marital status and religion on medical education among final year medical students in Nigeria.

Methods

The locations of the study are five out the six geopolitical zones of Nigeria. Nigeria, for ease of political and regional administration is divided into six geopolitical zones, thirty six States and one Federal Capital Territory (FCT), which are: North-East (Yobe, Borno, Bauchi, Gombe, Adamawa & Taraba States); North Central (Niger, Nasarawa, Kwara, Kogi, Benue, Plateau & FCT); North West (Sokoto, Katsina, Jigawa, Kano, Zamfara, Kaduna & Kebbi States); South East (Anambra, Abia, Enugu, Ebonyi, & Imo States); South-South (Edo, Delta, Cross River, Akwa Ibom, Rivers & Bayelsa States); South West (Oyo, Osun, Ekiti, Ogun, Ondo & Lagos States). Figure 1 showed the Map of Nigeria with different geopolitical zones/regions of the country.

Five out of the six geopolitical zones of the country with a total of ten (10) randomly selected medical schools, out of a total of twenty seven (27) fully accredited medical schools in Nigeria [8] were involved in the study. Two fully accredited medical schools were randomly selected from each of the five geopolitical zones, making a total of 10 fully accredited medical schools. The random selection of the ten medical schools led to 9 States participating in the study.

Therefore, a total of ten (10) fully accredited medical schools selected from nine (9) States and five (5) geopolitical zones of Nigeria were involved in the study. The five geopolitical zones and nine (9) States involved in the study were: North Central (Kwara & Plateau States); North West (Kano & Sokoto States); South East (Ebonyi & Enugu States); South-South (Cross River & Edo States) and South West (Lagos State). The data from the North East region could not be included in the study because of the constraint experienced from school closure secondary to 'Boko Haram' insurgence. The data for the study was collected in the year 2012/2013 academic session across different geopolitical zones/regions of Nigeria.

The ten fully accredited medical schools that participated in the study included:

College of Medical Sciences, University of Calabar, Cross River State-South-South

College of Health Sciences, Ebonyi State University Abakaliki, Ebonyi State-South East

College of Health Sciences, Igbinedion University Okada, Edo State-South-South

College of Medicine, University of Nigeria Enugu Campus, Enugu State-South East

Faculty of Medicine, Bayero University Kano, Kano State-North West

College of Medicine, University of Ilorin, Kwara State-North Central

College of Medicine, University of Lagos, Lagos State-South West

College of Medicine, Lagos State University Ikeja, Lagos State-South West

Faculty of Medical Sciences, University of Jos, Plateau State-North Central

College of Health Sciences, Usman Danfodio University Sokoto, Sokoto State-North West

Ethical Consideration

Ethical approval for this study was obtained from the Institutional Review Board (IRB) of Federal Neuropsychiatric Hospital, Enugu, Enugu State, Nigeria.

Procedure

The Questionnaires for this study were sent to Consultant Psychiatrists affiliated with each of these fully accredited medical schools in Nigeria. The data were collected from the medical students following completion of Psychiatry postings in their final year.

Results

A total of seven hundred and fifty seven (757) final year medical students drawn from ten (10) fully accredited medical schools across Nigeria were involved in the study. This gives an average of about 76 final year medical students per medical school.

Sex and age distribution

The total population of female final year medical students was 300 (39.6%) and 457 (60.4%) for males final year medical students. The minimum and maximum ages were 19 and 42 years respectively. The

mean age is 25.30 ± 2.90 year. The median and mode ages were both 25 years.

Sex and age distribution according to the geopolitical zones

Sex and age distribution according to the geopolitical zones are shown in Table 1. The gap in gender disparity or inequality is wider in the North Central and South East zones, whereas the gap was almost non-existent in the South West and South-South zones. The disparity in gender representation among the final year medical students, when all the zones are combined is statistically significant ($X2=13.29$, $df=4$, $p=0.01$), with male gender dominating the female gender. The gender distribution according to the geopolitical zones is also reflected in Figure 3.

Marital status and religion distribution

Seventy (9.2%) of the 757 final year medical students were married, while 687 (90.8%) were still single. The religion distribution revealed 181 (23.9%) of the final year medical students to be practicing Islam. Five hundred and seventy five (76.0%) of these students practice Christianity and only 1 (0.1%) of the students practices traditional religion. The marital status and religion distributions are shown in Table 2.

Gender				Age			
Geopolitical Zones	Male N (%)	Female N (%)	Total N (%)	Minimum Age(Years)	Maximum Age(Years)	Mean Age (Years)	Median Age(Years)
North Central	151 (69.6)	66 (30.4)	217 (100)	19	35	25.60 ± 2.47	25.00
North West	70 (56.9)	53 (43.1)	123 (100)	22	42	26.26 ± 2.64	26.00
South East	95 (60.9)	61 (39.1)	156 (100)	21	39	25.14 ± 2.80	25.00
South South	77 (55.8)	61(44.2)	138 (100)	19	38	25.30 ± 75	24.00
South West	64 (52.0)	59 (48.0)	123 (100)	20	31	24.03 ± 2.43	24.00
Total	457 (60.4)	300 (39.6)	757 (100)	19	42	25.30 ± 2.90	25.00

Table 1: Age and Gender Distribution according to Geopolitical Zones.

MARITAL STATUS				RELIGION			
Geopolitical Zones	Single N (%)	Married N (%)	Total (%) N (%)	Islam N (%)	Christianity N (%)	Traditional N (%)	Total N (%)
North Central	202 (93.1)	15 (6.9)	217 (100)	43 (19.8)	174 (80.2)	0 (0)	217 (100)
North West	90 (73.2)	33 (26.8)	123 (100)	112 (91.0)	11 (9.0)	0 (0)	123 (100)
South East	145 (92.9)	11 (7.1)	156 (100)	0 (0)	155 (99.4)	1 (0.6)	156 (100)
South South	130 (94.2)	8 (5.8)	138 (100)	0 (0)	138 (100)	0 (0)	138 (100)
South West	120 (97.6)	3 (2.4)	123 (100)	26 (21.1)	97 (78.9)	0 (0)	123 (100)
Total	687 (90.8)	70 (9.2)	757 (100)	181 (23.9)	575 (76.0)	1 (0.1)	757 (100)

Table 2: Marital Status and Religious Practices according to the Geopolitical Zones.

The lowest mean age (24.03 ± 2.43 years) is observed in the South West zone, while the highest mean age (26.26 ± 2.64 years) is observed in North West zone.

Marital status and religion distribution

Seventy (9.2%) of the 757 final year medical students were married, while 687 (90.8%) were still single. The religion distribution revealed 181 (23.9%) of the final year medical students to be practicing Islam. Five hundred and seventy five (76.0%) of these students practice Christianity and only 1 (0.1%) of the students practices traditional religion. The marital status and religion distributions are shown in Table 2.
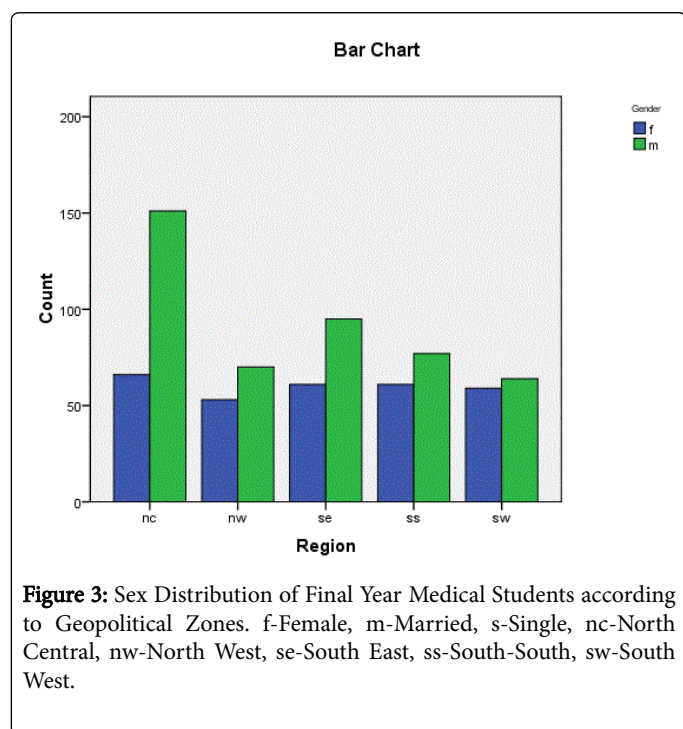

Figure 3: Sex Distribution of Final Year Medical Students according to Geopolitical Zones. f-Female, m-Married, s-Single, nc-North Central, nw-North West, se-South East, ss-South-South, sw-South West.

Marital status and religion distribution according to the geopolitical zones

Highest proportion of married final year medical students is from the North West zone. The disparity in marital status of the final year medical students is statistically significant (X2=45.64, df=4, p=0.00), with the larger proportion of the medical students in each of the five geopolitical zones more likely to be single. The marital status distribution according to geopolitical zones is shown in Figure 4.

North Central (NC) and South West (SW) revealed a mixture of Islam and Christianity as religions of practice among the students, but with predominance of Christianity, 80.2% and 78.9% for NC and SW respectively. South-South (SS) zone revealed 100% predominance for Christianity, while the South East (SE) zone showed 99.4% predominance for Christianity. Only the North West (NW) zone showed a predominance of Islam (91.0%) compared to other religions. The difference in religious practices among the studied final year medical students is statistically significant (X2=418.34, df=8, p=0.00), with most final year medical students more likely to practice Christianity. The religion distribution according to the geopolitical zones is shown in Figure 5.
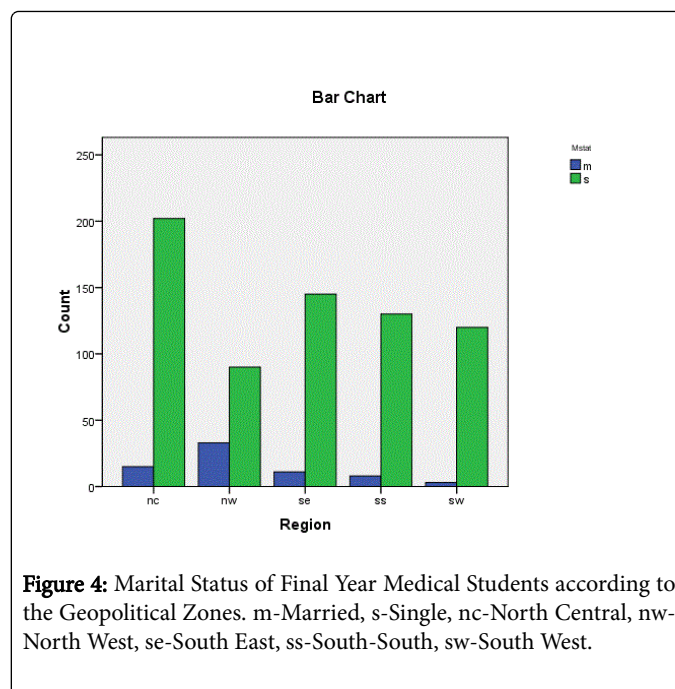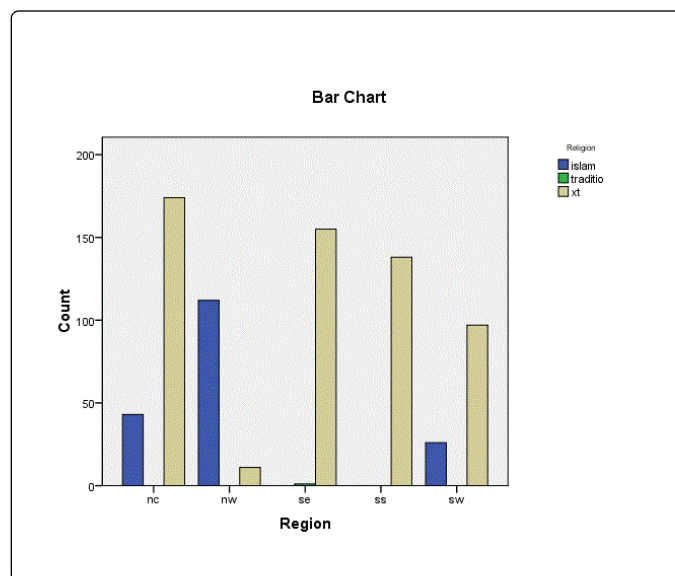

Figure 4: Marital Status of Final Year Medical Students according to the Geopolitical Zones. m-Married, s-Single, nc-North Central, nw-North West, se-South East, ss-South-South, sw-South West.

Discussion

The mean age of the final year medical students is about 25 years. The male gender accounted for higher proportion of the population. Most of the final year students are single and majority practice Christianity.

The geopolitical zones have influence on sex distribution with the widest disparity or inequality in gender observed in the North Central Zone, which is predominantly occupied by Hausa-Fulani and minority ethnic groups; the prevalent religion of practice in this zone is Islam [1]. In contrast, the gender disparity or inequality is almost non-existent in the South West zone, an area mostly inhabited by the Yorubas and nearly equal proportions of the population practice Christianity and Islam [1].

The lowest mean age is observed in the South West zone, while the highest mean age is observed in the North West zone.

The geopolitical zones also influence marital status. The highest proportion of married students was observed in the North West zone, an area with predominant Islamic practice. The lowest proportion of married students was observed in the South West zone.

The influence of geopolitical zones on religious practices among the final year medical students revealed the following: Predominant Christianity practice in the South-South, South East, South-West, and North Central zones with Islamic dominance observed only in the North-West zone. This observation raised a question of whether Islamic religion discourages western medical education. The observation may also have been as a result of non-representation of North East zone, which is a predominant Islamic practicing area in the data of this study.

Conclusions

Gender inequality characterized medical education in Nigeria among the final year medical students studied, with observation of male gender dominance. Individuals of younger age group graduate from medical schools in Nigeria when compared to countries where first degree in other discipline is mandatory for admission into medical schools. Majority of fresh graduating medical students in Nigeria are likely to be single. Higher proportion of individuals with Christian religious practice may be graduating from Nigeria medical schools when compare to individuals who practice Islam and other religions. It is important to note that the proportion of Christians in Nigeria is about 52.8% of the total population [6].

Not many information are available about medical education in Sub-Saharan Africa and it has been observed that policies need to be developed in this region to sustain medical workforce [6-9]. There is need to reduce wide inequalities regarding medical education in Sub-Saharan Africa. Our study provides some demographic information that can be applied in future policy formulation and development for medical education in Nigeria and most other Sub-Saharan African countries with multi-cultural, multi-ethnic and multi-religious outlook.

Competing interest

The author(s) declare no competing interest as related to this Article.

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