



## **Perception of Community Medicine as a Specialty Choice among Clinical Medical Students in a Nigerian University: Any Remedies?**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Authors BNE, ORA and POUA designed the study, wrote the protocol and supervised the work. Authors HNC and POUA performed the statistical analysis. Author CCE managed the analyses of the study. Author ALI wrote the first draft of the manuscript. Author ORA managed the literature searches and edited the manuscript. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Background:** Community Medicine is the study of health and disease in a population of a defined community. Insights into the attitude of clinical medical students towards Community Medicine specialty can help in planning a balanced workforce for better healthcare delivery.

**Objective:** This study was carried out to ascertain the perception of clinical medical students towards Community Medicine as a specialty.

**Methodology:** The study design was cross sectional descriptive. All the 296 medical students of

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Nnamdi Azikiwe University, Awka belonging to 4<sup>th</sup> to 6<sup>th</sup> year classes were recruited and interviewed for the study, but response rate was 290/296 (98%).

**Results:** Two hundred and ninety returned their questionnaires and they displayed good knowledge of the discipline and its role in the society; majority 269 (92.8%) perceived Community Medicine as vital part of medicine. About 45.9% and 45.5% displayed the most comprehensive knowledge and perception of the specialty respectively. However, only 41 (14.1%) would choose Community Medicine as a specialty; amounting to third most preferred specialty in Medicine after Surgery (42.4%) and Obstetrics/Gynecology (24.1%) in this study. Among the 249 who would not specialize in Community Medicine, 195 (78.3%) were of the opinion that 'it was not interesting'.

**Conclusion:** Respondents showed good knowledge of Community Medicine but majority would not specialize in the discipline mainly because they did not find it interesting. Continuous education of stakeholders, students, parents and general populace as to what really constitutes Community Medicine might be useful. Also curriculum should be redesigned to lay emphasis on the peculiarly interesting rural community-based postings.

*Keywords: Community medicine; medical students; perception; specialty choice.*

## 1. INTRODUCTION

Community Medicine is synonymous with Public Health, Preventive Medicine and Social Medicine. It is that field of medicine which is concerned with the study of health and disease in population of a defined community or group [1]. It helps to identify health problems and needs of the population through community diagnosis and by systematic application of planning, implementation and evaluation of health programs, it seeks to meet the identified needs of a given community [1].

After passing their qualifying examination, fresh Nigerian medical graduates face a selection and rather unique allocation process to prepare for further specialization into different aspects of Medicine. These are obtained after further education and practical work. After completion of a bachelor's degree in Medicine (MBBS), the career routes and alternatives available for medical graduates are medical Officers in the government sector or general practitioners in the private sector. They can also go for higher education either in Nigeria or abroad. Within Nigeria, the postgraduate studies in medicine are anchored by two parallel bodies; National Postgraduate Medical College and West African College of Physicians / Surgeons. The training grounds are the accredited teaching hospitals located in different parts of the country.

Medical education requires the exposure of undergraduates to a wide range of medical specialties. Most students will have sampled many of the broad areas of practice by the time they qualify [2,3]. As a result, it is often assumed

that students do not make their career choices until after they have finished medical school, remaining agnostic about their final specialty choice until that time [2,3]. However, medical school entrants, and even medical school applicants, often have strong preferences for, and particularly, against, some medical specialties, there is strong evidence, therefore, that career choice can be determined during or even before medical school [3].

The availability of an appropriately trained and motivated health workforce with a balanced specialty distribution is critical for the capacity of a health system to meet the needs of its population [4]. In addition the medical specialist provides education, coordinates research and contributes [5] to health policy formulation and implementation of healthcare programs.

The specialties of Internal Medicine, Surgery, Pediatrics and Obstetrics/ Gynecology are frequently chosen at the expense of other specialties including Community Medicine [4]. This has remained a recurrent finding in several studies of selection pattern of specialties among Nigerian medical students [6,7].

Insights into the reasons underlying the choice of medical specialties in a country can improve medical career planning [8]. Better matches of preference and actual specialty may prevent the early termination of a medical career [8]. These insights can also provide better information and counseling for medical students and young doctors and also guide them towards careers that serve their aspiration as well as the health needs of the society. The need for satisfactory specialist medical care as offered by Community

Physicians is growing and their mal-distribution has adverse implication on the availability and affordability of comprehensive health services and may create barriers to access specialist health care [8].

The objective of this study is to ascertain the current perception of clinical medical students regarding Community Medicine as a specialty choice.

## 2. METHODOLOGY

The study area was Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi, a tertiary health care institution and a training ground for clinical medical students of Nnamdi Azikiwe University, Anambra state, Nigeria. It is located in the urban part of Nnewi town. The major clinical specialties in the hospital include Surgery, Internal medicine, Pediatrics, Obstetrics and Gynecology.

The study was a cross sectional descriptive design on perception of Community Medicine as a specialty among clinical medical students. The study population included the clinical medical students belonging to the 4<sup>th</sup> to 6<sup>th</sup> classes. There were a total of 296 clinical medical students who expressed willingness to participate in the study and so were all recruited.

The minimum sample size was calculated using the formula [9]:

$$Nf = n / (1 + n/N)$$

where  $n = z^2 pq / d^2$ ;  $n$ =estimate of the population size;  $Nf$ = desired sample size when the population is <10000;  $N$ =desired sample size when the population is >10000;  $P$ = proportion [10] of medical students and graduates who favor same medical specialties from a previous study = 0.9;  $q = 1 - p$  which is  $1 - 0.9 = 0.1$ ;  $d$ = precision or degree of accuracy= 0.05;  $N$ =estimated study population =296.

$$\text{Therefore, } n = (1.96)^2 \times 0.9 \times 0.1 / (0.05)^2 = 108$$

Therefore  $Nf = 108 / 1 + (108/296) = 80.2$ . However, all the 296 students were recruited for study.

### 2.1 Data Collection

Pre-tested, close-ended, structured, interviewer-administered questionnaires were used to collect

data from respondents. The questionnaires were administered during free periods immediately after every lecture, and with help of previously trained research assistants. The students were encouraged to give honest responses in filling the questionnaires and return same before stepping out of the class. However, out of the 296 questionnaires distributed, 290 were completely filled.

Data was analyzed using Microsoft excel of the computer. Results on socio-demographic variables, knowledge and perception of Community Medicine as a specialty were presented in tables and figures for easy appreciation. Concerning the perception questions, students were instructed to choose the most likely response as it concerns them. Frequency distribution tables were then generated based on these specific responses and interpreted accordingly.

Ethical approval was obtained from the Nnamdi Azikiwe University teaching hospital Ethics committee through the head, department of Community Medicine.

### 2.2 Limitations of Study

The only means of data collection was through questionnaires. Although the researchers ensured reliability and validity of data, yet, it could not be assumed that the validity and the reliability was 100%. This was because there was no assurance that the questionnaire would give a perfect evaluation of knowledge, attitude and factors that influence choosing Community Medicine as a specialty, in the study population. However, the questionnaires were designed and pretested so as to ensure high repeatability or reliability.

## 3. RESULTS

Table 1 showed the socio-demographic characteristics of the students. The age group of respondents ranged from 16 years to more than 30years. Also age group 21-35 years has the highest proportion at 70.7%. The mean age was  $24 \pm 2.6$  years. There were more males (60%) than females (40%), mainly single (98.3%) and predominantly Christians (96.2%). According to Table 2, the study showed that majority of the students' parents attained tertiary education; 69% of the mothers and 73.1% of the fathers. In Table 3, the study indicated that 45.9% of the students knew Community medicine discipline to be 'preventive and social medicine' as well as

'planning and implementation of health programs'. However, 21.7% also described it as just 'preventive medicine'. In Table 4, the study showed that majority of the students (92.8%) perceived Community Medicine as important, even though 45.5% premised its usefulness on research, improvement of population health, and understanding of people and community. However 7(2.4%) perceived it as having a wide scope with emphasis on improvement of population health. Fig. 1, depicts that as many as 210 (72.4%) of the respondents got their information about Community Medicine from medical school. Other sources of information included school and friends (31; 10.7%), school, radio and family (12; 4.1%). In Table 5, the study shows that Surgery (42.4%) was the most popular specialty of choice among the students. This was followed by Obstetrics and gynecology (24.1%), Community medicine (14.1%), then Internal Medicine (9.7%) and Pediatrics (9.7%). Fig. 2 depicts that majority, 109 (37.6%) of the students took decision about their specialty area at the 4<sup>th</sup> year, 63 (21.7%) took same decision at the 6<sup>th</sup> level, 41 (14.1%) at 1<sup>st</sup> year, 37 (12.8%) at the 500 level and 18 (6.2%) at the 200 level. Fig. 3 indicates that the most singular reason for not choosing Community Medicine was because it was not interesting (195;67.2%). Other reasons were lower income potentials (30; 10.3%), provides less job opportunity (15; 5.2%) and difficult specialty (9; 3.1%).

#### 4. DISCUSSION

The career choice of undergraduate medical students will have an effect on national availability of health care manpower [10]. There is need to increase manpower in Community Medicine specialty. An understanding of some of the reasons that inform students' decisions regarding their future career will help in taking necessary corrective measures.

The mean age of 24±2.6 years among the students in this study was in agreement with the mean age of participants in a similar Pakistan [11] study. Their parents were largely educated suggesting predominantly middle to high socio-economic status as also reported in another study.

Majority of the respondents (45.9%) described Community Medicine discipline as preventive and social medicine; planning and implementation of health programs. This is an indication that students had good knowledge of

the functions and importance of Community Medicine. In fact some of the respondents even pointed out that Community Medicine held the key to the future of modern medicine because of the strong research component. These findings were similar to the outcome of another study among medical students in Colombo University [12].

**Table 1. Demographic variables of respondents**

Variable	Frequency (n=290)	Percent
<b>Age group (years)</b>		
16-20	11	3.8
21-25	205	70.7
26-30	70	24.1
>30	4	1.4
Total	290	100.0
Mean age (years)	24	
Standard deviation (years)	2.6	
<b>Gender</b>		
Male	174	60
Females	116	40
<b>Marital status</b>		
Married	5	1.7
Single	285	98.3
<b>Religion</b>		
Christians	279	96.2
Others**	11	3.8
<b>Class levels</b>		
400	82	28.3
500	102	35.2
600	106	36.5

\*\* Traditional religionists, Muslims, Atheists

**Table 2. Parents' levels of education**

Variable	Frequency (n=290)	Percent
<b>Educational level</b>		
<b>Mothers' highest level of education</b>		
Primary	30	10.3
Secondary	60	20.7
Tertiary	200	69.0
Total	290	100.0
<b>Fathers' highest level of education</b>		
No formal education	6	2.1
Primary	36	12.4
Secondary	36	12.4
Tertiary	212	73.1
Total	290	100.0

In this study, it was observed that the students' willingness to choose Community Medicine as a career was not in agreement with the high knowledge and positive perceptions previously

displayed. Only 14.1% of the students opted to choose Community Medicine as a career. The rest would not specialize in the discipline because of such reasons as finding the discipline boring, having lower income potential, and being difficult to study. These were the same reasons cited by respondents in previous similar studies [2,11]. This was probably due to lack of interest and motivation to learn Community Medicine. On the other hand, it could be due to greater interest in the other clinical components of medicine. Perhaps this is an indication that the students favored other specialties where they could practice the core clinical skills acquired during their six-year training.

**Table 3. Knowledge of community medicine as a discipline**

Variable	Frequency (n=290)	Percent
<b>Community medicine best described by</b>		
Preventive and social medicine; planning and implementation of health programs	133	45.9
Preventive medicine	63	21.7
Preventive medicine, planning and implementation of health programs	57	19.7
Planning and implementation of health programs	24	8.2
Preventive and social medicine	13	4.5

At the root of this thinking was a fundamental lack of information among the students concerning the Community Medicine discipline. This can further be buttressed by the finding in this study that a majority of the respondents (72.4%) heard about the Community Medicine discipline for the first time while in the medical school. Only 4.1%-10.7% enjoyed the privilege of a prior knowledge from family members, friends, mass media and pre-university schools. It is therefore, even surprising that in this study, Community Medicine was the preferred area of specialization among the students after Surgery and Obstetrics / Gynecology. In some previous research, Community Medicine had been consistently found to remain one of the least preferred specialties among medical students [10,13].

Among the 249 (85.9%) students who would not choose community medicine as a career

specialty, 195 (78.3% ie 195/249) said the main reason for their stance was that they did not find the discipline interesting enough. Stereotyped orientation regarding what a doctor's function in the hospital and society should be, may have contributed to this opinion. Also the spectrum of career choice was biased in favor of core clinical specialties because the students believed that these other specialties would give them higher incomes than Community Medicine. This is in agreement with result of a similar study in University of Alberta [11].

**Table 4. Perception of usefulness of community medicine as a discipline**

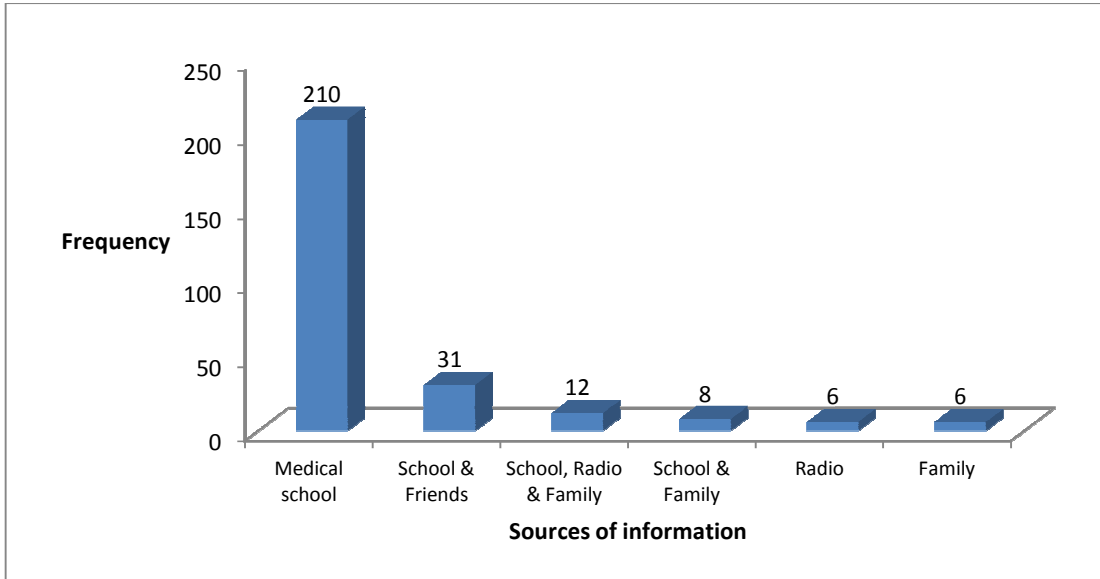
Variable	Frequency (n=290)	Percent
<b>Perception Items</b>		
<b>General importance of discipline as perceived by the students</b>		
Important	269	92.8
Not important	21	7.2
<b>Usefulness of discipline as perceived by the students</b>		
Research-oriented, improves population health and helps to understand people and community	132	45.5
Improves population health	49	16.9
Research-oriented, improves population health	48	16.6
Research-oriented	34	11.7
Helps understand people and community	20	6.9
Wide scope, improves population health	7	2.4

**Table 5. Preferred areas of specialization by the students**

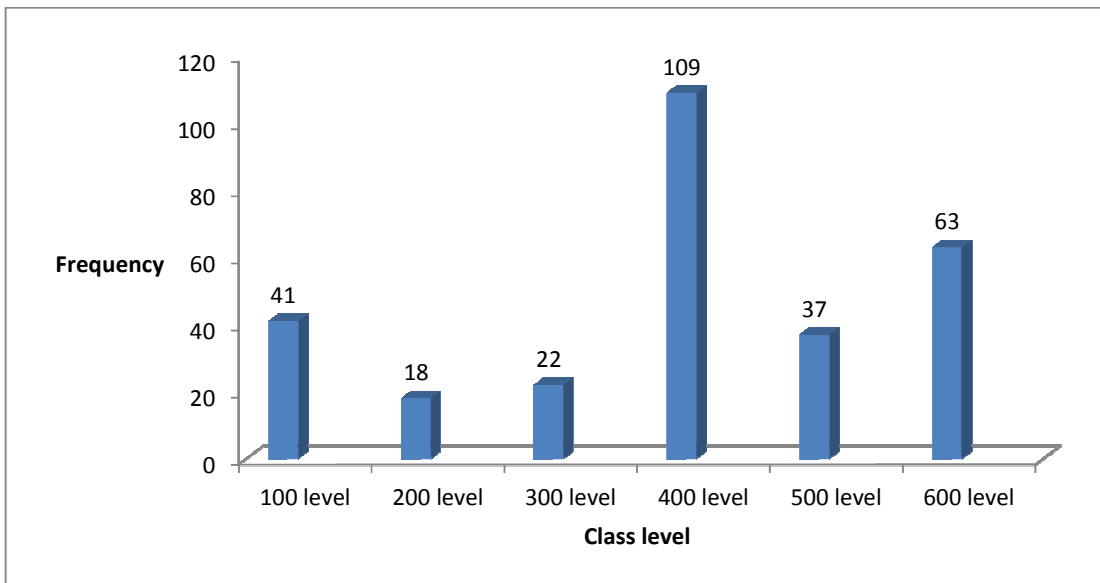
Variable	Frequency (n=290)	Percent
<b>Disciplines</b>		
Surgery	123	42.4
Obstetrics and gynecology	70	24.1
Community medicine	41	14.1
Internal medicine	28	9.7
Pediatrics	28	9.7
Total	290	100.0

This study identified the 4th year as the point at which most of the students made their choices of specialization. Similar studies carried out in an Indian medical school also showed that most students made their choices at 4th year level [12]. This may be due to the fact that Community Medicine often introduced at the 200 level, became more intensely meaningful with the didactic lectures and introduction of the urban

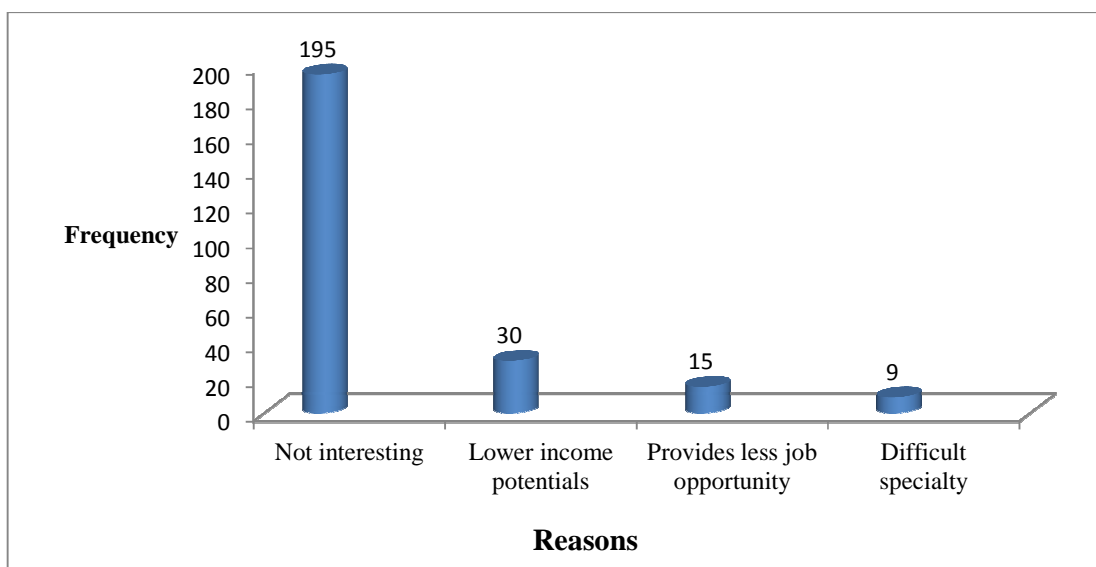
and rural postings at the 4th year. However this finding was not consistent with the outcome of another study done in Ahmadu Bello University teaching hospital [14] where most of the students made their choices at graduating level. This discrepancy may have arisen as a result of differences in approach to the delivery and execution of the medical school curriculum.



**Fig. 1. Sources of information about community medicine discipline**



**Fig. 2. Level at which decision was taken about specialty area**



**Fig. 3. Main reason for not choosing community medicine**

## 5. CONCLUSION

The knowledge and perception of Community Medicine as a specialty among the students were impressive. However, majority of them were not willing to specialize in the discipline because they did not find it interesting enough. The distribution of specialty choice which was often made at the 4<sup>th</sup> year of study remained in favor of core clinical specialties mostly Surgery and Obstetrics /Gynecology. These findings have implications for the provision and proper distribution of the medical workforce in Nigeria. There is a need for medical education to offer career guidance and proper orientation to the upcoming medical workforce as mal-distribution could lead to overcrowding of professionals in a particular specialty which could lead to frustration. Also teachers should re-design, harmonize and standardize the Community Medicine curriculum to fall in line with the concept of community-based medical education. Allocating more time to the urban and rural postings will encourage more interactions with the communities and will potentially generate interest and excitement in the specialty. Awareness creation about Community Medicine should begin in secondary schools and through the mass media. Community Physicians should take up air time and explain what the specialty is all about. The objectives of the discipline should be clearly explained to secondary school students during their career days. Finally, more infrastructures such as standard public health museums, public health laboratories and well equipped residential

rural training centers should be provided for the medical trainees as these could be incentives for considering Community Medicine as a specialty.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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