Knowledge and perception of Family Medicine among medical students at University of Ibadan, Nigeria

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Background: Postgraduate training in Family Medicine in Nigeria began over three decades ago, but it was not until recently that the National University Commission (NUC) made it a policy for all Nigerian universities to include undergraduate Family Medicine training in their curriculum. This study aimed to assess the awareness and perception of Family Medicine among medical students at the University College Hospital (UCH), Ibadan.

Method: A descriptive cross-sectional study was conducted over a period of four weeks (June 11–July 6, 2018) among 131 fourth-year, 118 fifth-year and 163 sixth-year medical students at UCH, Ibadan. Data were obtained using a self-administered questionnaire.

Results: Data were collected from 309 (75% of the target population). The mean age of the respondents was 22.3 ± 2.3 years. The majority (74.4%) did not have a family member who was a doctor and only 2.3% had a family member who was specialising in Family Medicine. Most of the participants (68.9%) had good knowledge of Family Medicine, while 57.3% had good perception of Family Medicine as a specialty. Importantly, an increase in year of clerkship was associated with an increase in the knowledge of Family Medicine among the respondents.

Conclusion: It was observed that with increase in length of exposure to Family Medicine as a specialty, knowledge and perception of the specialty improved among the medical students. It is imperative that all the medical schools in Nigeria implement the NUC directive and start undergraduate Family Medicine training.

Keywords: knowledge, perception, Family Medicine, medical student, Ibadan

Introduction

The realisation of the essential role played by the family physician in the provision of quality first contact care and in the judicious use of limited resources has led to an increasing need for family physicians globally. Family physicians are specialist physicians trained to provide continued, comprehensive care for people of all ages irrespective of gender and illness; as such, it is important that more medical graduates choose to specialise in Family Medicine to facilitate efficient first contact care in all strata of healthcare delivery.

Unfortunately, Family Medicine as a specialty still struggles for recognition in some parts of the world, especially in Africa, where a great need still exists in the teaching of Family Medicine at undergraduate level. The undergraduate teaching of Family Medicine may facilitate adequate and appropriate perceptions of the specialty by medical students and prevent incorrect bias against the specialty. In Nigeria, family physicians are sometimes perceived as being synonymous with medical officers, who are generalists with the basic medical degree and skills that are acquired from years of clinical practice without any structured postgraduate training or recertification. The core competencies that distinguishes a family physician from a medical officer include patient/person centred clinical methods (PCCM), using the biopsychosocial model of care, primary care management, specific problem-solving skills, a comprehensive approach and holistic modelling. These competencies are best introduced early from the foundation years of medical school and should be ingrained in every doctor’s basic medical training. This is currently lacking in the medical education obtained by most medical officers.

Though postgraduate family medicine training has been ongoing for up to 30 years in Nigeria, it is not reflective of inclusion of Family Medicine in undergraduate medical education. Unlike other specialties, which are introduced to medical students from the first year in medical school, undergraduate Family Medicine is yet to be fully incorporated into the curriculum of many medical schools in Africa. In Nigeria, despite the introduction of Family Medicine into undergraduate school at the University of Calabar, College of Medicine in 1976, it is difficult to explain the slow adoption in other medical schools in Nigeria. Currently, only 15 universities, which equates to barely 1% of Nigerian medical schools, teach Family Medicine despite the 2015 recommendation by the National Universities Commission that Family Medicine should be incorporated into the undergraduate curriculum in Nigeria. In Europe, a study found that up to 19% of medical schools had no or a very brief Family Medicine curriculum. However, in South Africa, Family Medicine training is well established in most medical schools.

According to the Nigeria Undergraduate Medical and Dental Curriculum template of 2012, the tenets of Family Medicine should be introduced as part of lectures in the second and third years of medical school, while clinical rotations (clerkship) in Family Medicine I (Junior clerkship) and II (Senior clerkship) should be undertaken in the first semesters of the fifth and sixth years respectively. This is the format currently being utilised in the College of Medicine, University of Ibadan since 2015 following the implementation of the new integrated curriculum across all faculties of the university. Family Medicine lectures have also been newly incorporated into the core lectures.
series in the fourth year of medical education at the College of Medicine University of Ibadan.

In South Africa, a study across first- to fourth-year medical students showed poor knowledge across all groups of students, especially among first-year medical students. An improvement in knowledge of Family Medicine was noted among third-year Pakistani medical students who had a two-week clerkship in Family Medicine. Similar trends were reported among Spanish students following a four-month primary care course, inclusive of a one-week clinical clerkship in primary care.

As a specialty still in evolution globally, studies have shown a diverse variation in the length of clerkships and structure of undergraduate Family Medicine curriculum across different settings and in various countries. The teaching of Family Medicine is, however, yet to be incorporated into undergraduate medical education in most medical schools in Nigeria despite the National Universities Commission directive to create Family Medicine departments and allow for specific periods of Family Medicine didactic and clinical exposure. There is a paucity of information regarding Family Medicine teaching in medical schools in Nigeria. This study set out to determine the level of knowledge and perceptions of Family Medicine among medical students in Nigeria and the association with the length of clerkship.

Methodology

Design and setting

The study used a descriptive cross-sectional design and was conducted over a one-month period (June 11–July 6, 2018) at the University College Hospital (UCH), Ibadan located in Ibadan North Local Government Area of Oyo state. University College Hospital is an 850-bed hospital established in 1957 for the training of medical students at the College of Medicine, University of Ibadan (COMUI), resident doctors and other health professionals. The then Faculty of Medicine was one of the first faculties of the University of Ibadan at its establishment 68 years ago. Presently it is part of the COMUI, which is made of six faculties, namely the faculties of Basic Sciences, Clinical Sciences, Public Health, Dentistry, Nursing and Physiotherapy. The medical students are schooled within the Faculty of Basic Medical Sciences in the first three years of medical school and within the Faculty of Clinical Sciences in their last three years of the six-year programme of undergraduate medical training in Nigerian universities.

The first year until the end of the first half of the third year of medical school are preclinical in nature, while the latter half of the third year to the sixth year are clinical. It is noteworthy to explain that the second half of the third year is a transition phase when the students have general introductory lectures to clinical sciences and acclimatise to the clinical settings. The clinical years entail core lectures that span all organ/body systems, patient-centred care, community health, and laboratory medicine, as well as clinical rotations through the different clinical departments of University College Hospital (UCH), Ibadan.

The Family Medicine core lectures series consists of 22 didactic lectures spread over the first 18 months of the clinical years, which iterates Family Medicine tenets, perspectives and management of conditions across all organ systems. Two blocks of four-week clerkship rotations, namely Family Medicine I (junior clerkship) and Family Medicine (senior clerkship) II, are undertaken by the fifth- and sixth-year medical students in the Department of Family Medicine, UCH. The General Out-Patient Clinic (GOPC) of the Department of Family Medicine, UCH, Ibadan primarily serves as an entry point to the hospital for patients under the age of 60 years, while the Geriatric Centre, an off-shoot of the Family Medicine Department, cares for patients aged above 60 years. Patients in both the general outpatient clinic and geriatrics centre are seen, triaged and treated by Family Medicine resident doctors and consultant family physicians who provide primary and secondary levels of care and refer to other specialties as required. Students on Family Medicine clinical posting rotate through these two clinics.

Study population

The study involved medical students of the COMUI who were in the clinical school. There were 131 fourth-year students, 118 fifth-year students and 163 sixth-year students at the time of the study. The fourth-year (first clinical year) students were chosen to represent the baseline informants as they were yet to have Family Medicine clinical exposure. All consenting medical students in the fourth to sixth years who were present in the classroom at the time of data collection were included in the study.

Data collection

Data were collected using a self-administered questionnaire (Appendix 1), which contained different sections as follows:

Section A: Sociodemographic and family characteristics of the respondents.

Section B: Questions exploring the student’s knowledge and understanding of Family Medicine as a specialty. The questions were derived from a pre-validated questionnaire from a similar study on the current undergraduate Family Medicine curriculum of the University of Ibadan. Each correct answer was scored 1 point, and an incorrect answer scored 0.

Section C: Questions on perception of the respondents towards Family Medicine, which was answered on a Likert scale: strongly agree, agree, uncertain, disagree and strongly disagree. The questions were derived from pre-validated questionnaires from similar studies assessing perception of Family Medicine among medical students and on anecdotal evidence on the perception of Family Medicine in this environment. Strong agreement and agreement with a positive statement on Family Medicine or strong disagreement and disagreement with a negative statement was scored 1 point. Any other response did not earn any points.

The survey was conducted in the classroom setting, either before or after class lectures. The study was explained to the medical students by a research assistant who had no affiliation with the medical students. The research assistant provided clarifications regarding the survey, obtained consent from the students and collected completed questionnaires. All questionnaires were anonymous and no personally identifiable information was collected.
Data analysis
The primary outcome variables were knowledge and perceptions of Family Medicine. The independent variables were the sociodemographic characteristics. Knowledge and perception scores above the overall mean score of respondents were categorised as positive while those below the mean score were categorised as negative. Other variables were also grouped as categorical variables for ease of analysis. Data collected were cleaned and statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS Version 20.0 IBM Corp, Armonk, NY, USA). The confidence interval was set to 95% and a p-value of less than 0.05 was considered significant. Descriptive statistics were displayed using frequency tables. Bivariate and multivariate analysis using a chi-square test and binary logistic regression respectively were carried out to test the association between sociodemographic characteristics and knowledge and perceptions of Family Medicine.

Ethical considerations
Approval of the Ethical Review Committee of the University of Ibadan/University College Hospital Ibadan Institutional Review Board (UI/UCH IRB) was obtained with study number UI/EC/18/0138.

Results
The results obtained from the data collected from 309 participants are presented in this section. The sociodemographic characteristics of the respondents are given in Table 1. Their mean age was 22.3 ± 2.3 years. Most of the respondents (74.4%) did not have a family member who was a doctor, while only 2.3% had a family member who practices Family Medicine. The respondents’ knowledge score ranged from 6 to 13, with a mean score of 11.1±1.5. The score for perception ranged from 0 to 14 with a mean score of 7.7±2.6. As shown in Table 2, 68.9% and 57.3% of the respondents had positive knowledge and a positive perception of Family Medicine as a specialty. Tables 3 and 4 show that as the clerkship year and monthly allowance increased, knowledge and perception of Family Medicine among the medical students also improved. A binary logistic regression performed to ascertain the effect of these factors showed that the monthly allowance was not

Table 1: Frequency table of respondent sociodemographics

| Sociodemographic characteristics | Frequency | Percentage |
|----------------------------------|-----------|------------|
| Gender                           |           |            |
| Male                             | 208       | 67.3%      |
| Female                           | 101       | 32.7%      |
| Age range                        |           |            |
| < 25 years                       | 272       | 88%        |
| > 25 years                       | 37        | 12%        |
| Marital status                   |           |            |
| Single                           | 306       | 99%        |
| Married                          | 3         | 1%         |
| Religion                         |           |            |
| Christian                        | 263       | 85.1%      |
| Islam                            | 37        | 12%        |
| Others                           | 9         | 3%         |
| Tribe                            |           |            |
| Yoruba                           | 202       | 65.6%      |
| Hausa                            | 5         | 1.6%       |
| Igbo                             | 61        | 19.8%      |
| Others                           | 40        | 13%        |
| Year of clerkship                |           |            |
| Fourth year                      | 105       | 34%        |
| Fifth year                       | 85        | 27.5%      |
| Sixth year                       | 119       | 38.5%      |
| Medical doctor as a family member|           |            |
| Family physician                 | 7         | 2.3%       |
| Specialist in other specialties   | 72        | 23.3%      |
| None                             | 230       | 74.4%      |
| Monthly allowance                |           |            |
| < N20,000 (< $55)                | 124       | 40.3%      |
| ≥ N20,000 (≥ $55)                | 184       | 59.7%      |

Table 2: Knowledge and perception of Family Medicine

| Variables | n = 309 | Percentage |
|-----------|---------|------------|
| Knowledge of Family Medicine specialty: | | |
| Positive | 213 | 68.9% |
| Negative | 96 | 31.1% |
| Perception of Family Medicine specialty: | | |
| Positive | 177 | 57.3% |
| Negative | 132 | 42.7% |

*Statistically significant at 5% level of significance.

Table 3: Factors affecting knowledge of family medicine

| Year of clerkship | Negative knowledge | Positive knowledge | χ² | p-value |
|-------------------|--------------------|--------------------|----|---------|
| Fourth year       | 52 (49.5%)         | 53 (50.5%)         | 26.562 | .001* |
| Fifth year        | 22 (25.9%)         | 63 (74.1%)         |     |         |
| Sixth year        | 22 (18.5%)         | 97 (81.5%)         |     |         |
| Monthly allowance |                   |                    |    |         |
| < N20,000 (< $55) | 47 (37.9%)         | 77 (62.1%)         | 4.85 | 0.028* |
| ≥ N20,000 (≥ $55) | 48 (26.1%)         | 136 (73.9%)        |     |         |

*Statistically significant at 5% level of significance.

Table 4: Factors affecting perception of Family Medicine

| Year of clerkship | Negative perception, n (%) | Positive perception, n (%) | χ² | p-value |
|-------------------|---------------------------|----------------------------|----|---------|
| Fourth year       | 55 (52.4)                 | 50 (47.6)                  | 6.371 | 0.041* |
| Fifth year        | 34 (40.0)                 | 51 (60.0)                  |     |         |
| Sixth year        | 43 (36.1)                 | 76 (63.9)                  |     |         |
| Gender:           |                           |                            |    |         |
| Male              | 89 (42.8)                 | 119 (57.2)                 | 0.001 | 0.972   |
| Female            | 43 (42.6)                 | 58 (57.4)                  |     |         |
| Doctor family member |                   |                            |    |         |
| Family Medicine |                           |                            | 0.007 | 0.936   |
| Other specialties | 3 (42.9)                  | 4 (57.1)                   |     |         |
| Monthly allowance |                           |                            |    |         |
| < N20,000 (< $55) | 63 (50.8)                 | 61 (49.2)                  | 5.356 | 0.021* |
| ≥ N20,000 (≥ $55) | 69 (37.5)                 | 115 (62.5)                 |     |         |

*Statistically significant at 5% level of significance.
significantly associated with knowledge \((p = 0.648)\) and perception \((p = 0.12)\) levels respectively.

**Discussion**

This study showed that a significant number of medical students in the clinical years had a positive knowledge of Family Medicine as a specialty. The knowledge of Family Medicine is expected to be greater among those who have had higher levels of exposure to the practice as corroborated and reported by other studies.\(^{13}\) This was demonstrated by the increasing proportion of students with a positive knowledge of the specialty, which was elicited in 50% of the fourth-year students and in approximately 80% of the final-year students. The final-year (sixth year) medical students who had been exposed to a total of eight weeks of Family Medicine clerkship in addition to Family Medicine core lectures obviously demonstrated better knowledge of Family Medicine compared with the fifth-year medical students who had four weeks’ clerkship and the fourth-year medical students who were yet to undergo a clinical clerkship posting in Family Medicine. This finding is similar to that of another study in which significantly higher scores were recorded for questions assessing knowledge in Family Medicine following a four-month Family Medicine course.\(^{14}\) In addition, exposure to a Family Medicine course and clerkships have been reported to improve attitudes to and perceptions of Family Medicine, as depicted in this study.\(^{14,16,19}\) In a study among students in a Spanish medical school, following a primary care course, there was a significant increase in the proportion of students who considered Family Medicine as a specialty of preference, increasing from 38.6% prevalence to 70.4%.\(^{14}\) A higher monthly allowance was also found to be associated with better knowledge and perception of Family Medicine. This was most likely due to the confounding effect of their clerkship year as it is expected that the monthly allowance would increase with higher level classes in medical school based on their advanced needs. This study did not show a significant association between having a relation who is specialising in Family Medicine and medical students’ perception of the specialty.

The drive to have family physicians in adequate numbers to cater for our population needs to be strategically entrenched through awareness creation at the undergraduate levels. The Nigerian Universities Commission has taken the first step by mandating Family Medicine in clinical clerkship at the undergraduate level, a directive that is well embraced by the College of Medicine, University of Ibadan.

**Limitations**

This study was limited in that it was a cross-sectional study that could not establish a temporal relationship between clerkship exposure and changes in knowledge and perceptions of the students. This could have been achieved using a longitudinal study design; however, the mobility of clinical medical students especially for external elective posting would have made this challenging. In addition, this study could not include all students in clinical school as intended because of the exigencies of the medical school, which made some of the students unavailable at the time of data collection.

**Conclusion**

The result of this study shows that to improve the knowledge and perceptions of Family Medicine among medical students, clinical clerkship in Family Medicine should be promoted in medical schools. This is important because medical graduates with sound knowledge of Family Medicine, irrespective of future area of specialisation, will possess a good understanding of primary care, which will strengthen the healthcare systems of Nigeria as a nation.

**Recommendations**

The findings from this study support the National Universities Commission’s recommendation that Family Medicine teaching and clinical clerkship must be included in the curriculum of medical schools in Nigeria.

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No potential conflict of interest was reported by the authors.

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Appendix 1

Questionnaire

Knowledge and perceptions of Family Medicine among medical students at the University of Ibadan

Good day. This is a self-administered questionnaire for research purposes in Undergraduate Medical Education in Family Medicine conducted by a group of Family Medicine residents of the University College Hospital, Ibadan in collaboration with lecturers in the College of Medicine, University of Ibadan. Participation is voluntary and all information gathered will be treated as confidential. Thank you for agreeing to take part.

Signature:

Serial no:

Section A: sociodemographic characteristics

1. Year/Level
2. Group
3. Age as at last birthday (years)
4. Gender 1. Male 2. Female
5. What position are you in the family 1. First 2. Last 3. Others
6. Relationship status 1. Single 2. Engaged 3. Married
7. Religion 1. Christianity 2. Islam 3. Others
8. Tribe 1. Hausa 2. Ibo 3. Yoruba 4. Others
9. What is your monthly monetary allowance from your parents/guardian? 1. Less than 20,000 2. 20,000 – 40,000 3. 40,000 – 60,000 4. 60,000 and above
10. What is your father’s occupation
11. What is your father’s highest level of education? 1. None 2. Primary 3. Secondary 4. Tertiary
12. What is your mother’s occupation
13. What is your mother’s highest level of education? 1. None 2. Primary 3. Secondary 4. Tertiary
14. Do you have any family member who is a medical doctor? 1. Yes 2. No
15. If Yes to 14 above, what specialty?
16. How would you describe where you grew up? 1. Rural 2. Urban
17. How many degree exams have you written? (Part 1, Part 2 etc.)
18. In how many of these exams did you have resits?

Section B: knowledge of Family Medicine specialty

20. Family Medicine is a recognised specialty
21. Family physicians provide first-contact care and link patients to the healthcare system
22. Family physicians can manage people of all age groups
23. Family physicians can manage people irrespective of the disease
Section C: the following statements are on perceptions of family medicine. Please tick the box showing the response most appropriate to you

| Statement                                                                 | Strongly agree | Agree | Uncertain | Disagree | Strongly disagree |
|--------------------------------------------------------------------------|----------------|-------|-----------|----------|-------------------|
| 33. Family Medicine clinical rotation is beneficial to medical students  |                |       |           |          |                   |
| 34. I would rather have Family Medicine as an elective rather than compulsory rotation |                |       |           |          |                   |
| 35. The duration of the rotation is sufficient                           |                |       |           |          |                   |
| 36. Family Medicine is intellectually stimulating                        |                |       |           |          |                   |
| 37. The cases managed by family physicians are not serious cases         |                |       |           |          |                   |
| 38. Family physicians are not as important as the other specialists      |                |       |           |          |                   |
| 39. I do not think it is possible to be a specialist in Family Medicine as it covers a wide range of medical problems |                |       |           |          |                   |
| 40. Family Medicine is easy compared with other specialties             |                |       |           |          |                   |
| 41. I think there are more jobs for family physicians than other specialists |                |       |           |          |                   |
| 42. I think the workload in Family Medicine is more than in other specialties |                |       |           |          |                   |
| 43. I think other specialists make more money than family physicians    |                |       |           |          |                   |
| 44. Cost of healthcare is reduced with more family physicians           |                |       |           |          |                   |
| 45. I think the prospects for Family Medicine abroad are appealing      |                |       |           |          |                   |
| 46. I think the prospects for Family Medicine in Nigeria are poor        |                |       |           |          |                   |
| 47. I think Family Medicine is a specialty for females                   |                |       |           |          |                   |