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ABSTRACT

Introduction
Family Medicine is not included in the undergraduate training curriculum by most universities in Nigeria despite its importance in medical training globally. This study is aimed at determining the perception of the impact of Family Medicine undergraduate training on the medical practice post-graduation, among medical graduates of Ambrose Alli University (AAU), Ekpoma, Nigeria.

Methods: The study was descriptive cross-sectional that administered a semi-structured questionnaire on 91 medical graduates of AAU from 2006 to 2020 who filled and submitted the forms online. Responses received were collected and analysed using Statistical Package for Social Sciences (SPSS).

Results: Most of the respondents were males 64 (70.3%) with a mean age of 34.8 (± 5.88) years. They mostly practiced in public health facilities 76 (83.5%) located in semi-urban areas 45 (49.5%). The majority 38 (41.7%) believed their Family Medicine undergraduate training has had a major influence on their medical career. Most of the respondents 43 (47.3%) often apply the principles of Family Medicine in their clinical practice and 39 (42.8%) also used Family Medicine tools in their practice.
Conclusion: Undergraduate Family Medicine training was found to be useful post-graduation and its principles were being used by respondents in their medical practice irrespective of specialty. They also perceived the training as necessary for undergraduate medical students. There is therefore the need to increase Family Medicine training in our medical schools.

Key Words: Undergraduate, Family Medicine, Education, Clinical Practice, Impact

INTRODUCTION

Family Medicine is that branch of medicine that offers continuous, coordinated, and comprehensive care to the patient irrespective of age, sex, or disease condition in the context of the family and the society.[1] Globally, Family Medicine is gaining greater prominence, with Family Physicians comprising almost half of the total physicians in Australia, Canada, and France.[2] There is a paucity of Family Physicians, specialists in other fields, as well as medical personnel in West Africa, partly due to increased migration to other countries for better conditions of service.[2]

Family Medicine has not been fully integrated into undergraduate medical education in Nigeria as is done in other climes including South Africa, Canada, and Australia.[3-7] This is despite its being included in the Undergraduate Medical Curriculum by both the Nigerian University Commission (NUC) and the Medical and Dental Council of Nigeria (MDCN) as far back as 2002.[7,9] Most universities in the country do not have Family Medicine departments. Some run it as a unit of Internal Medicine or Community Medicine department while others don't offer it at all. Also, aside from the University of Calabar, there is no separate assessment for Family Medicine for undergraduates, it is usually assessed as part of Internal medicine or Community Medicine.[9]

Ambrose Alli University (AAU), Ekpoma, Edo State, has been teaching Family Medicine to medical students since its inception. The university is one of the few in Nigeria with a department of Family Medicine. The department has a robust Family Medicine undergraduate training program in which students are exposed to the core principles of Family Medicine for eight weeks after which students write an end of posting exam which is part of their continuous assessment in the final Medicine examinations, during which they are also examined in Family Medicine alongside departments of Mental Health and Internal Medicine.

This study was aimed at determining the perception of Family Medicine undergraduate training on medical practice post-graduation, among medical graduates of Ambrose Alli University College of Medicine with the hope that findings from this study, will make policymakers particularly the MDCN and NUC, as well provosts of medical schools in the country and beyond, see the need to allocate more time to the study of Family Medicine during undergraduate medical studies, as well as ensure Family Medicine is examined separately alongside Internal Medicine and Surgery in the Final MBBS examination. This will make students take the discipline more seriously, and will in turn make them better doctors, who will offer comprehensive coordinated care in their clinical practice post-graduation both in the rural and urban areas.

SUBJECTS AND METHODS

The study was conducted in the Family Medicine department of Ambrose Alli University (AAU), Ekpoma, Edo State which is among the first and leading state universities in Nigeria. The College of Medicine of the university is in charge of medical education.

This study was descriptive and cross-sectional. A semi-structured pretested self-administered questionnaire was administered to 91 medical graduates from Ambrose Alli

University, Ekpoma, from 2006 and 2020 and practiced at the time of the study in Nigeria/Diaspora who consented to participate in the study. A total of 15 sets of about 750 doctors have graduated from AAU from 2006 to 2020. Most of them still interact via their WhatsApp groups. Known members of each of the sets were contacted and made to share the questionnaire with all the WhatsApp groups. Other medical graduates were reached through Facebook Messenger, and the form was administered to them, while also encouraging them to share the questionnaires with their classmates, and other medical graduates of AAU. Medical graduates were also reached through other medical platforms and contacted individually. The questionnaire was developed from pre-validated questionnaires from similar studies[7,10,11] and pretested using medical students in their final year of studies. The questions were evaluated on a Likert scale where 'strongly agree' and 'agree' were considered positive answers and 'disagree' and 'strongly disagree' were considered negative answers. Questionnaires were filled and submitted online and responses were collected and entered into data spreadsheets. The Statistical Package for Social Sciences (SPSS Inc., Chicago, IL) version 22.0 (IBM Corp., Armonk, N.Y., USA) was used for data analysis. Descriptive statistics were used to summarize the demographic and baseline characteristics. Continuous variables were summarized as numbers of observed values, means, standard deviation, and range. Categorical variables were described as frequency and percentages. Chi-square and Fischer exact tests were used to determine associations and assess the perception of Family Medicine Education as well as the application of Family Medicine principles to medical graduates. A p-value <0.05 was considered to be statistically significant.

Ethical approval was obtained from the Ethical Committee of Irrua Specialist Teaching Hospital, the training hospital for AAU medical students (PROTOCOL NO: ISTH/HREC/20211502/151). Informed consent was obtained online from the respondents after a detailed explanation of the study to them. Anonymity, privacy, and confidentiality were maintained as the questionnaire did not contain the name or initials of the participant, and data was protected from third-party access through passwording of the information and end-to-end encryption.

RESULTS

A total of 91 respondents made up of medical graduates of Ambrose Alli University, Ekpoma, Nigeria from 2006 to 2020 participated in the study. Most of the respondents were males 64 (70.3%), in their 4th decade of life 52 (57.1%), with a mean age of 34.8 (± 5.88) years. They mostly practiced in public health facilities 76 (83.5%) located in semi-urban areas 45 (49.5%). Most respondents practiced in tertiary health facilities 61 (67%) with 5 (5.5%) respondents being Consultant Family Physicians and 17 (18.7%) Residents in Family Medicine. The Sociodemographic characteristics of respondents are tabulated in Table 1.

Table 1: Socio - Demographic Characteristics of Respondents

Variable	Frequency (N = 91)	Percent
Year of graduation		
≤ 2009	15	16.5
2010-2015	42	46.2
2016-2021	34	37.3
Age (in years)		
21-29	19	20.9
30-39	52	57.1
40-49	17	18.7
≥ 50	3	3.3
Sex		
Female	27	29.7
Male	64	70.3
Category of Work		
Private	15	16.5
Public	76	83.5
Location of Practice		
Rural	13	14.3
Semi-rural	45	49.5
Urban	33	36.2
Place of Practice		
Educational facility	3	3.3
Primary healthcare facility	8	8.8
Research facility	1	1.1
Secondary healthcare facility	18	19.8
Tertiary healthcare facility	61	67.0
Cadre		
House officer	19	20.9
Medical officer	34	37.4
Registrar	20	21.9
Senior registrar	8	8.8
Consultant	10	11.0
Currently a Family Medicine Physician		
Consultant Family Physician	5	5.5
Family Medicine Resident	17	18.7
Intending to do Family Medicine	18	19.8
No	51	56.0

Mean Age (both sexes): 34.8 (± 5.88) years.

Table 2: Respondent's Perception of Undergraduate Training in Family Medicine

Variable	Frequency (N = 91)	Percent
Availability during Undergraduate Postings		
< 50%	4	4.4
50-75%	27	29.7
≥ 75%	60	65.9
Number of Lectures Attended		
< 50%	3	3.3
50-75%	28	30.8
≥ 75%	60	65.9
Duration of Undergraduate Training in Family Medicine Was Inadequate		
Strongly Agree	35	38.5
Agree	13	14.2
Uncertain	5	5.5
Disagree	5	5.5
Strongly Disagree	33	36.3
Duration of Clinical Exposure During Family Medicine Training Was Inadequate		
Strongly Agree	34	37.4
Agree	21	23.1
Uncertain	4	4.4
Disagree	13	14.2
Strongly Disagree	19	20.9
Perception of Undergraduate Training		
Very necessary	33	36.3
Necessary	41	45.1
Indifferent	11	12.0
Unnecessary	1	1.1
Very Unnecessary	5	5.5

Table 3: Influence of Respondents' Undergraduate Training in Family Medicine Principles on Clinical Practice.

Variable	Frequency (N = 91)	Percent
Influence on Clinical Practice		
Major influence	38	41.7
Moderate influence	33	36.3
Can't say	5	5.5
Little influence	12	13.2
No influence	3	3.3
Apply Principles of Family Medicine		
Always	15	16.5
Often	43	47.3
Sometime	27	29.6
Rarely	4	4.4
Never	2	2.2
Use Family Medicine Tools		
Always	15	16.5
Often	39	42.8
Sometime	26	28.6
Rarely	8	8.8
Never	3	3.3
Found Knowledge of Family Medicine Useful		
Strongly Agree	54	59.3
Agree	27	29.7
Uncertain	6	6.6
Disagree	3	3.3
Strongly Disagree	1	1.1
Family Medicine Training influenced Your Ability to Manage Patients		
Strongly Agree	28	30.7
Agree	29	31.9
Uncertain	8	8.8
Disagree	8	8.8
Strongly Disagree	18	19.8

Table 4: Association Between Socio - Demographic Characteristics of Respondents and Perception of Undergraduate Training.

Variable	Frequency (N= 91) (%) Perception of Undergraduate training					χ^2	P-value
	V	N	I	U	VU		
Year of Graduation							
≤ 2009	3 (20.0)	9 (60.0)	3(20.0)	0 (0.0)	0 (0.0)		
2010-2015	18 (42.9)	15 (35.7)	7(16.7)	0 (0.0)	2 (4.7)	9.82	0.457
2016-2021	14 (41.3)	17 (50.0)	1 (2.9)	1 (2.9)	1 (2.9)		
Age (in years)							
25-29	5 (26.3)	11 (57.8)	0 (0.0)	1 (5.3)	2(10.6)		
30-34	9 (36.0)	12 (48.0)	3 (12.0)	0 (0.0)	1 (4.0)	14.05	0.522
35-39	14 (51.9)	9 (33.3)	4 (14.8)	0 (0.0)	0 (0.0)		
≥ 40	6 (30.0)	9 (45.0)	4 (20.0)	0 (0.0)	1 (5.0)		
Sex							
Female	15 (55.6)	8 (29.6)	2 (7.4)	1 (3.7)	1 (3.7)	38.02	< 0.001
Male	20 (31.2)	33 (51.6)	9(14.1)	0 (0.0)	2 (3.1)		
Category of Work							
Private	5 (33.3)	6 (40.0)	3(20.0)	0 (0.0)	1 (6.7)	32.17	<0.001
Public	30 (39.5)	35 (46.1)	8(10.5)	1 (1.3)	2 (2.6)		
Location of Practice							
Rural	4 (30.7)	6 (46.2)	2(15.4)	1 (7.7)	0 (0.0)		
Semi-rural	17 (37.8)	22 (48.9)	5(11.1)	0 (0.0)	1 (2.2)	39.91	<0.001
Urban	14 (42.4)	13 (39.3)	4(12.2)	0 (0.0)	2 (6.1)		
Place of Practice							
Education facility	1 (33.3)	2 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)		
Primary facility	2 (25.0)	6 (75.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Research facility	0 (0.0)	0 (0.0)	1(100.0)	0 (0.0)	0 (0.0)	53.38*	<0.001
Secondary facility	11 (61.1)	3 (16.7)	2 (11.1)	0 (0.0)	2(11.1)		
Tertiary facility	21 (34.5)	30 (49.2)	8 (13.1)	1 (1.6)	1 (1.6)		
Cadre							
House officer	5 (26.3)	10 (52.6)	3 (15.8)	0 (0.0)	1 (5.3)		
Medical officer	12 (35.4)	17 (50.0)	3 (8.8)	1 (2.9)	1 (2.9)	27.67*	0.323
Registrar	8 (40.0)	8 (40.0)	4 (20.0)	0 (0.0)	0 (0.0)		
Senior registrar	3 (37.5)	3 (37.5)	1 (12.5)	0 (0.0)	1(12.5)		
Consultant	7 (70.0)	3 (30.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Currently a Family Medicine Physician							
Yes	4 (80.0)	1 (20.0)	0 (0.0)	0 (0.0)	0 (0.0)		
No	19 (37.3)	22 (43.1)	6 (11.8)	1 (1.9)	3 (5.9)	38.49*	0.008
Fam Med Resident	8 (47.1)	9 (52.9)	0 (0.0)	0 (0.0)	0 (0.0)		
Intending	5 (27.8)	9 (50.0)	4 (22.2)	0 (0.0)	0(0.0)		

Key: V (Very Necessary), N (Necessary), I (Indifferent), U (Unnecessary), VU (Very Unnecessary)

*Fisher's Exact Test

Table 5: Association Between Socio-Demographic Characteristics of Respondents and their Application of Family Medicine Principles.

Variable	Frequency (N = 91) (%)					$\chi 2$	P value
	Apply principles of Family Medicine						
	Always	Often	Sometimes	Rarely	Never		
Year of Graduation							
≤ 2009	3 (20.0)	5 (33.3)	6 (40.0)	1 (6.7)	0 (0.0)		
2010-2015	8 (19.0)	21 (50.0)	10 (23.8)	3 (7.2)	0 (0.0)	7.26	0.701
2016-2021	5 (14.7)	17 (50.0)	11 (32.4)	0 (0.0)	1 (2.9)		
Age (in years)							
25-29	1 (5.3)	10 (52.6)	7 (36.8)	0 (0.0)	1 (5.3)		
30-34	3 (12.0)	13 (52.0)	8 (32.0)	1 (4.0)	0 (0.0)	12.32	0.654
35-39	8 (29.6)	11 (40.8)	6 (22.2)	2 (7.4)	0 (0.0)		
≥ 40	4 (20.0)	9 (45.0)	6 (30.0)	1 (5.0)	0 (0.0)		
Sex							
Female	5 (18.5)	14 (51.9)	6 (22.2)	1 (3.7)	1 (3.7)	49.14	< 0.001
Male	11 (17.2)	29 (45.3)	21 (32.8)	3 (4.7)	0 (0.0)		
Category of Work							
Private	2 (13.3)	5 (33.3)	8 (53.4)	0 (0.0)	0 (0.0)	50.87	< 0.001
Public	13 (17.0)	38 (50.0)	19 (25.0)	4 (5.4)	2 (2.6)		
Location of Practice							
Rural	2 (15.4)	6 (46.1)	3 (23.1)	1 (7.7)	1 (7.7)		
Semi-rural	6 (13.3)	23 (51.1)	14 (31.1)	2 (4.5)	0 (0.0)	55.10	< 0.001
Urban	8 (24.2)	14 (42.4)	10 (30.3)	1 (3.1)	0 (0.0)		
Place of Practice							
Educational facility	1 (33.3)	2 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)		
Primary facility	0 (0.0)	3 (37.5)	5 (62.5)	0 (0.0)	0 (0.0)		
Research facility	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	57.32*	< 0.001
Secondary facility	4 (22.2)	9 (50.0)	5 (27.8)	0 (0.0)	0 (0.0)		
Tertiary facility	18 (29.5)	27 (44.3)	13 (21.3)	3 (4.9)	0 (0.0)		
Cadre							
House officer	13 (68.4)	3 (15.8)	3 (15.8)	0 (0.0)	0 (0.0)		
Medical officer	6 (17.7)	15 (44.1)	8 (23.5)	3 (8.8)	2 (5.9)		
Registrar	3 (15.0)	10 (50.0)	7 (35.0)	0 (0.0)	0 (0.0)	43.60*	0.012
Senior registrar	1 (12.5)	5 (62.5)	1 (12.5)	1(12.5)	0 (0.0)		
Consultant	3 (30.0)	5 (50.0)	2 (20.0)	0 (0.0)	0 (0.0)		
Currently a Family Physician							
Yes	4 (80.0)	1 (20.0)	0 (0.0)	0 (0.0)	0 (0.0)		
No	7 (13.7)	24 (47.0)	18 (35.3)	1 (2.0)	1 (2.0)	59.42	< 0.001
Fam Med resident	4 (23.5)	10 (58.8)	2 (11.8)	1 (5.9)	0 (0.0)		
Intending	2 (11.1)	8 (44.4)	7 (38.9)	1 (5.6)	0 (0.0)		

*Fisher's Exact Test

A total of 60 (65.9%) respondents were available 75% or more of the time during their Family Medicine posting. Also, 60 (65.9%) respondents attended up to 75% of the total lectures during their Family Medicine postings. However, the majority 48 (52.7%) of respondents felt the duration of training was inadequate and only 32 (35.1%) respondents felt the duration of clinical exposure was adequate during the posting. Most respondents 74 (81.3%) perceived Family Medicine undergraduate training as necessary. The respondents' perception of undergraduate training in Family Medicine is summarised in Table 2.

The influence of respondents' undergraduate training in Family Medicine principles on their clinical practice is contained in Table 3. The majority (78.0%) believed their Family Medicine undergraduate training has influenced their medical career. Most of the respondents 58 (63.8%) apply the principles of Family Medicine in their clinical practice. Most of them 54 (59.3%) also used Family Medicine tools in their practice. Most respondents 81 (89.0%) found knowledge of Family Medicine acquired during their undergraduate training useful and 57 (62.6%) respondents said the training influenced their ability to manage patients.

Table 4 shows the association between socio-demographic characteristics of respondents and perception of undergraduate training in Family Medicine. Medical graduates' perception of the necessity of their undergraduate Family Medicine training was significantly affected by female sex ($p<0.001$), public practice ($p<0.001$), practicing in a semi-urban setting ($p<0.001$), in a tertiary health facility ($p<0.001$) and being a Family Physician ($p=0.008$).

Table 5 shows the association between the socio-demographic characteristics of respondents and their application of family medicine principles. There was a significant association between being female ($p<0.001$), in public practice ($p<0.001$), in an urban setting ($p<0.001$), in a tertiary health facility ($p<0.001$), being a house officer ($p=0.012$), as well as being a Consultant Family Physician ($p<0.001$) and application of family medicine principles.

DISCUSSION

In the past few decades, family medicine has developed into a clinical and academic discipline aiming to provide quality and comprehensive care for people of all ages irrespective of gender and illness as well as contribute to medical research and education.[1,3,12,13] This development was necessitated by the need to train physicians who will adapt their knowledge, competence, and skills to the unique and challenging environment of a developing country like Nigeria. The peculiar, broader health needs of Nigeria and the rather few specialists in other fields required a realistic conceptual framework. This is imperative as it is becoming increasingly evident that a strong Primary Health Care system is more likely to provide better population health, more equity in health throughout the population, and better use of economic resources, compared to systems that are oriented towards specialty care.[14]

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 for the teaching of Family Medicine at the 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[3-7]

Ambrose Alli University (AAU), Ekpoma, Edo State, is one of the few universities in Nigeria that has been teaching Family Medicine to medical students since its approval by NUC two decades ago. During their undergraduate training, most of the respondents were available and attended lectures most of the time however the majority of them felt the eight weeks duration of training was inadequate as it did not give them enough clinical exposure. Most of them however perceived that undergraduate medical training was necessary. An inadequate training period was also observed by some other studies[12,13,15]

In this study, the majority of the participants believed their Family Medicine undergraduate training has influenced their medical careers. Most of the respondents apply the principles and tools of Family Medicine in their clinical practice. For most respondents, knowledge of Family Medicine acquired during their undergraduate training was useful and the training influenced their ability to manage patients. This is encouraging and underscores the need to increase the allotted time for those institutions that currently teach undergraduate Family medicine and for those yet to commence the teaching to do so without further delay as the teaching of Family Medicine is, yet to be incorporated into undergraduate medical education in most medical schools in Nigeria despite the National Universities Commission's directive to create Family Medicine departments and allow for specific periods of Family Medicine didactic and clinical exposure.[7,9.]

This study shows the importance of undergraduate training in the principles and skills of Family Medicine to the medical practice of a doctor, particularly in Nigeria. Despite the short time allocated to undergraduate training in Family Medicine, the graduates admitted that it had positively influenced their practice. Thus, allocating a longer period could be beneficial to the undergraduate training, as this will translate to graduate doctors, who are better equipped to undertake the responsibilities of a physician of first contact, who is capable of looking after the preventive, promotive, curative, and rehabilitative aspect of medicine.[4]

CONCLUSION

Most graduates who were exposed to undergraduate Family Medicine undergraduate training found it useful post-graduation and were still using the principles of family medicine in their medical practice irrespective of specialty. They also perceived the training as necessary for undergraduate medical students. The perception of medical graduates was significantly associated with whether they were Family Physicians or not. Hence their perception was a predictor of their choice of family medicine as a specialty. There is therefore

the need to increase Family Medicine training in our medical schools.

Limitations

Small sample size.

Limitations in generalization of findings.

The sampling technique was convenient sampling because it was an online survey.

RECOMMENDATIONS

Increasing the size of the workforce providing primary medical care has become important, especially in developing countries with limited resources. Undergraduate medical training is an effective strategy to meet this need, and ensure equitable distribution of quality healthcare through primary care physicians. There is a genuine need to increase the period allocated for undergraduate training in Family Medicine, to produce better-equipped physicians of first contact. We hope that these findings (from our study), will make the NUC, MDCN, and provosts of medical schools see the urgent need to allocate longer periods for undergraduate training in Family Medicine.

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