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EVALUATION OF ADOLESCENT MEDICINE SUB-SPECIALTY TRAINING IN NIGERIA: TRAINEES' PERSPECTIVES
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ABSTRACT

***Objective*: To evaluate the extent of coverage of curriculum contents pertinent to Adolescent Medicine, as well as the adequacy of facilities and professionals in Nigeria using residents' viewpoint.**
***Design*: A descriptive cross-sectional study.**
***Setting*: The Intensive Course in Paediatrics of the National Post-graduate Medical College of Nigeria at the University of Benin Teaching Hospital, Benin City Nigeria.**
***Subjects*: One hundred and three paediatric residents from training institutions in all zones of the country.**
***Results*: Altogether,68.0% and 32.0% of the participants were from Southern and Northern geopolitical zones respectively. Only 14% of them stated that a rotation in an AM unit is a part of training in their centres. None specified its duration. Coverage of AM topics, physical facilities and trainers were rated as inadequate by 77.0%, 82.8% and 70.8% of the respondents respectively. Residents from north were more likely to rate interview/confidentiality in AM as covered (either partly or well) than their colleagues from the South, ($p < 0.01$, OR = 5.3, 95% CI = 1.5-19.5). We found no difference between federal and state residents' perceived adequacy of AM training.**
***Conclusion*: AM in paediatric residency programme in Nigeria is still an unmet challenge. There is a need for a revision of the training curriculum to specify mandatory duration of clinical rotation in AM units.**

INTRODUCTION

Adolescent health problems have been incorporated into Paediatrics Training Curriculum in West Africa over the past few decades, especially in the core clinical areas of General Paediatrics and Preventive Paediatrics (1). With minimal variations among accredited institutions the recommended duration of clinical rotations by the Faculty board is three months in the above core areas (1). Also, proficiency is required at the end of residency in Adolescent Medicine (AM) services including anticipatory health guidance, school health programme, abuse and adolescent gynaecology (1).

Although, the above curriculum contents are reasonably comparable to the requirements of the Accreditation Councils of Graduate Medical Education (ACGME) and other international regulatory bodies for AM training, there is sub-optimal coverage because of limited workforce and facilities in training institutions in the sub-region (2,3). Also, the use of the Firm System for clinical rotations during residency programme interferes with in-depth coverage of recommended AM topics, since trainees take part in several core areas of paediatrics concurrently. This portends an unmet need of AM services in our communities, considering that over 20% of the population are adolescents with their peculiar health issues related to development, abuse, substance use, violence, STD, HIV/AIDS, obesity and hypertension (4-6). Although there is a gradual improvement in under five morbidities and mortalities since the nineties, there is a static or worsening trend in several aspects of adolescent health even in the developed nations (7-9).

Therefore, in order to adhere to international standards and optimise the trainings of paediatricians to meet the glaring health need of the populace, the Faculty of Paediatrics of the post-graduate medical colleges in the sub-region implements the Unit System of clinical rotations including AM sub-specialty in accredited centres recently (10). This will

ensure Total Quality Assurance in AM training and facilitate optimum development of this novel field of paediatrics in the sub-region. Also, it may avert adolescent health crisis imminent in the foreseeable future.

This survey describes the state of AM training, at its inception, in paediatrics residency programme in Nigeria using trainees' view point. We evaluated the extent of coverage of curriculum contents, as well as the adequacy of facilities and professionals.

MATERIALS AND METHODS

Study setting and participant: The study was carried out from 19th of February to March 4th 2013 at the multipurpose hall of Oba Akenzua Complex at the University of Benin Teaching Hospital, Benin City Nigeria. The participants were resident doctors in Paediatrics attending the Intensive Course in Paediatrics of the National Post-graduate Medical College of Nigeria at the venue. It was a descriptive cross-sectional study. Permission was sought from the Local Organizing Committee (LOC) of the revision course. Informed consent was obtained from every study participants.

A total of 103 residents out of estimated 160 paediatric residents attending the revision course took part in the survey. This gives a high response rate of 64.4%.

Data Collection: A self-administered questionnaire for Paediatrics residents (available on request) was designed to elicit: (a) Socio-demographic and practice characteristics,(b)extent of coverage main AM topics (general, reproductive and behavioural);(c) availability of physical facilities and professionals for AM training at their institutions.

Respondents training institutions were classified into federal, state and others. They were simply described by geopolitical zones. Specific names and addresses were not required to ensure confidentiality.

In addition to close-ended questions, open-ended questions enable the participants to specify other AM topics well covered in their institutions and the available resources. Moreover, a five-item Likert scale helped to define trainees' views of the adequacy of their current AM training, infrastructures and quality of trainers.

Statistical Analysis: The data were analysed using the Software package for Social Science (SPSS) version 20.0 (Windows Inc; Chicago, IL, USA). Categorised data such as sex, status and geographical zones were presented as proportions. The frequencies for the responses were calculated. Residents' views of the adequacy of AM training were re-classified as adequate, indifferent and inadequate.

Fisher's exact test or Pearson's Chi-square was used to compare federal and state residents' responses, and to assess for any significant between northern and southern geopolitical zones. Odd ratio was calculated. A 2-sided p-value < 0.05 was considered significant.

RESULTS

Participants' characteristics and duration of clinical rotations.

A total of 103 residents participated in the survey, 68.0% and 32.0% from southern and northern geopolitical zones respectively. About eighty two percents are from federal facilities while the rest where mainly from state facilities. The mean age of the respondents was 32.6±4.3 years. Further details of participants' characteristics are shown in Table 1.

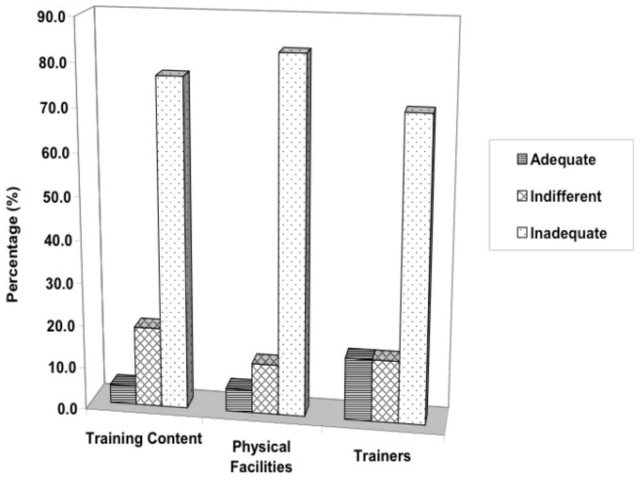
Forty-one percent of the participants stated that AM is incorporated into other clinical rotations during residency in their institution, while 14% responded that a rotation (posting) in an AM unit is a part of training in their centres. However, none of the participants specified the duration of posting in AM unit in their institutions.

Table 1
Socio-demographic and Practice Characteristics of the Respondents n = 103

Characteristics	Frequency	Percentage (%)
Sex		
Male	47	45.6
Female	56	54.4
Duration of Practice		
<5yrs	44	42.7
≥5 yrs	59	57.3
Current Status		
Registrar	95	92.2
Senior registrar	8	7.8
Current Institution of residency		
Federal Teaching Hospital	61	59.2
Federal Medical Centre	24	23.3
State Teaching Hospital/others	18	17.5
Geopolitical zones		
North East	7	6.8
North West	10	9.7
North Central	16	15.5
South East	17	16.5
South West	27	26.2
South South	26	25.3

Residents' Overall Views of Adequacy of AM Training
Altogether, less than 10% of the residents agreed that AM training in their centres was adequate. Coverage of AM topics, physical facilities and trainers were rated as inadequate by 77.0%, 82.8% and 70.8% of the respondents respectively, Figure 1.

Figure 1
Residents' views of the adequacy of training contents, physical facilities and trainers



Coverage of Specific AM Curriculum Contents: A majority of the respondents stated that AM topics were not covered during residency training in their institutions. Residents' views of the extent of coverage major AM topics are shown in Table 2.

Residents from northern geopolitical zones were more likely to rate interview/confidentiality in AM as covered (either partly or well) than their colleagues from the South, ($p < 0.01$, OR = 5.3, 95% CI = 1.5-19.5). Also, adolescent psychosocial problems were slightly more covered in the northern than the southern zones, from residents' viewpoint; however, this was not statistically significant, ($p = 0.05$, OR = 2.7, 95% CI = 0.9 -7.7). Coverage of other general and reproductive AM topics was similar in all zones. Moreover, this survey found no difference between federal and state residents' perceived adequacy of coverage to AM topics.

Table 2
Residents' views of the extent of coverage of AM topics

AM Topics	Extent of Coverage					
	Not covered		Partly Covered		Well covered	
	N	%	N	%	N	%
General						
Interviewing/confidentiality n = 94	29	30.9	52	55.3	13	13.8
Screening for abuse (physical, sexual) n=94	45	47.9	40	42.6	9	9.6
Violence/weapon/cultism n = 93	65	69.9	24	25.8	4	4.3
Transition from paediatric to adult care n=93	43	46.2	38	40.9	12	12.9
Reproductive						
Menstrual problems n = 91	34	37.4	42	46.2	15	16.5
Sexuality n = 90	38	42.2	40	44.4	12	13.3
Contraception n = 92	48	52.2	33	35.9	11	12
Sexually Transmitted disease n = 92	31	33.7	46	50	15	16.3

Behavioural						
Psychosocial problems n = 90	36	40	43	47.8	11	12.2
Eating disorder n = 87	48	55.2	35	40.2	4	4.6
Tobacco/Alcohol/drug use n = 86	46	53.5	37	43	3	3.5
Bullying n = 85	55	64.7	27	31.8	3	3.5

Physical Infrastructure: The most widely available facilities were out-patient paediatric clinic, family planning clinic and, child and adolescent psychiatric clinics in 70%, 43% and 30% of respondents' institutions respectively. Other residents' responses on the availability of physical infrastructure are summaris, Table 3.

Table 3
Available facilities for adolescent training in institution/setting

Facilities	Availability			
	Yes		No	
	N	%	N	%
Out-patient paediatric clinic n = 94	66	70.20	28	29.80
Adolescent Medicine Clinic n = 93	6	6.50	87	93.50
Adolescent in patient ward n = 95	8	8.40	87	91.60
Family Planning Clinic n = 93	40	43.00	53	57.00
Child /Adolescent Psychiatry Clinic n = 93	28	30.10	65	69.90
Juvenile Detention Centers n = 94	5	5.30	89	94.70
Departmental website on AM n = 94	6	6.40	88	93.60
Library with AMsubsection n = 92	7	7.60	85	92.40

AM = Adolescent medicine

Trainers: General paediatricians and AM specialists were available for AM training according to 71.0% and 12.2% of the respondents. Other health professionals that were available in respondent institutions for AM clinical rotations were shown in Table 4.

Table 4
Health Professionals available for AM training in respondents' institutions

Professionals	Availability			
	Yes		No	
	n	%	n	%
Adolescent Medicine Specialist n = 90	11	12.2	79	87.8
General Paediatrician n = 93	66	71.0	27	29.0
Clinical Psychologist n = 90	20	22.2	70	77.8
Clinical Social worker n = 92	45	48.9	47	51.1
Health Educator/Counselor n = 89	29	32.6	60	67.4

DISCUSSION

This study reflects the views of nearly two-third of Nigerian Paediatrics residents attending the National Updrade Course (2013) in UBTH, Benin from all geopolitical zones of the country. AM training is now a major priority area of paediatrics in Nigerian Post-graduate Medical education (10). No specific duration of clinical rotation in AM unit is identified in this study. Less than one fifth of respondents stated that there is a functional AM unit in their institutions being essentially submerged into other core areas of paediatrics while using the Firm System (1). This is in contrast to the situation in several developed

countries where AM training is well established for several decades, despite their relatively smaller adolescent population (11,12). In the USA, the ACGME mandated one month rotation in AM during paediatrics residency (13). Most residency programmes generally adopt this recommendation with 5% of them requiring a longer rotation. Fox *et al* (13) confirmed that about 30% of residents rotate at between 1 and 3 sites during their block rotation in AM, while about 20% rotate at ≥ 7sites. Although this multiple site rotation often reduces the actual time spent per site, it can be corrected for by increasing the overall duration of AM posting. This wide range of exposure can improve the competence of the trainees (14).

There is an obvious need for the Faculty Board of Paediatrics in Nigeria to continue to advocate prompt development of AM specialty in all trainingcentres, and specify a mandatory duration of AM posting during residency. This will boost the competence of general paediatricians who will encounter adolescents regularly in their clinical practice (15). Moreover, centres of excellence in AM can be established in various zones of the country. Academic affiliation can be instituted that will enable other centres to send their residents for clinical rotations at such designated centres. This can be supported by the National Strategic Framework on Adolescent Health Development of the Federal Ministry of Health (16).

Only 4.4% of the respondents agreed that coverage of AM topics in the paediatrics training curriculum was adequate in their institutions. Besides adolescent confidentiality, residents' perceived adequacy of coverage of AM topics was similar in all regions and institutions. The relatively improved coverage of adolescent confidentiality issues in the northern region could be partly due to differences in sociocultural practices and trainees/trainers ratios in accreditedcentres in the country. Nonetheless, northern and southern as well as federal and state residents equally rate available AM professionals and facilities as inadequate. Hence, manpower and physical infrastructure alone would not account for any perceived difference in coverage of AM topics. Thus, while improving human and material resources, there is a need for a revision of the existing paediatrics residency curriculum in the country to include a distinct subsection on AM (1).

The most widely available facility for AM training during residency is out-patient paediatrics clinic (70.2%) while the least is Juvenile Detention Centres(5.3%). Only 6.5% of the residents stated that AM clinic is available in their setting. This mirrored suboptimal intra- and inter-institutional partnership in the country.About 60% of our participants were from Federal Teaching Hospitals with facilities in other academic/clinical departments that can be utilised for AM training. For instance, child/Adolescent Psychiatric Clinic and Adolescent Gynaecology services can be structured in collaboration with the Psychiatry and Obstetics/Gynaecology departments to meet paediatricsresidentslearning need (13). Also public school clinics and Comprehensive Health Centres can be enlisted as training sites during AM clinical rotations (13). Later such field experiences are valuable in the paediatrician's practice in the community (17). However, the foregoing may not be attained until there are more AM specialists and General Paediatricians with interest in AM in the country as well as favourable institutional policies.

AM specialistswereavailable to teach residents during clinical rotations according to 12.2 percent of the residents. Also other professionals like clinical psychologists and health educators/counselling were limited in numbers.This scenario is due to the prolonged neglect of the subspecialty in the sub-region, leaving medical graduates and paramedics unaware of the scope and prospect of the specialty.18If the postgraduate medical colleges, Paediatrics Association of Nigeria (PAN) and other stakeholders can sustain their present interest in this specialty the number of professionals available will increase steadily, based on demand-supply principles. Also, international collaborations for subspecialty training will promote this novel field of paediatrics in the sub-region (12).

In conclusion, residents are one of the major stakeholders in post-graduate medical education. In their views, AM in paediatrics residency programme in Nigeria is still an unmet challenge. There is a need for a revision of the training curriculum to specify mandatory duration of clinical rotation in AM units. Further, studies are required to determine trainer's perceptions of this specialty.

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