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A Descriptive Analysis of Paediatricians' Involvement in Community Child Health in Nigeria: So Far How Far?

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Authors' contributions

This work was carried out in collaboration among all authors. Author IOA conceived the paper, oversaw data collection, conducted data analysis, initial manuscript draft and critical editing of manuscript for important intellectual content. Author ACU initial the manuscript draft and critical editing of manuscript for important intellectual content. Author ANI managed the critical editing of manuscript for important intellectual content. All authors read and approved the final manuscript.

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ABSTRACT

Background: Community child health activities are considered an important professional role of Pediatricians as a child advocate. However practice constraints and personal factors may limit involvement.
Objective: The objective was to analyze community involvement of paediatricians in 2017 and factors associated with participation.
Methods: A self-administered questionnaire of all Paediatrician at the annual conference of Paediatrics Association of Nigeria (Panconf) 2017 at Zaria, in Nigeria was the tool. Questions on community child health outside of their clinical practice were elucidated. This includes questions on

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school health programme. Their willingness to volunteer and the timing of formal training were sought. We used Chi square statistics to measure associations of personal and practice characteristics. Logistic regression assessed independent contributions.
Results: Analysis showed there were total of n = 260 in attendance. Fewer paediatricians were into community child health in 2017 (35.1%) outside their routine work, with a higher percentage participating as volunteers (79.5%). Most reported formal training at residency (80.2%). The older age, having children older than 5 years, urban settings and formal training were significant. In adjusted models, older age and formal training were associated with involvement (P < .05).
Conclusions: Formal training during residency and older paediatricians are associated with community child health activities. Therefore, intensification of advocacy competencies and other community child health activities for all residents and retraining of paediatricians for refreshing of experiences and related skills are advocated.

Keywords: Paediatricians; involvement; community; child health.

1. INTRODUCTION

"Paediatricians have been encouraged to engage in community child health activities to promote the well-being of children at a population level" [1-3]. National and West African postgraduate colleges, faculty of Paediatrics training curriculum for postgraduate fellowship in Paediatrics and Child Health needs evidence of clinical rotation in community Paediatrics and Primary Health Care/School health Programme as a core area [4, 5]. The American Academy of Pediatrics also recognizes community pediatrics as "the practice of promoting and integrating the positive social, cultural, and environmental influences for children's health as well as addressing 'potential negative effects that deter optimal child health and development within a community" [3]. "In America Paediatricians are expected to adopt a population group, combine public health principles with clinical practice to collaborate with them to improve the health and well-being of children and families" [3].

In the developed world, there is the Community Health and Advocacy Training Program, [6- 8] and the Child Advocacy Curriculum and other initiatives to promote involvement of Paediatrician after clinical training in the community. "In developing countries efforts to promote pediatricians' involvement in the community have included initiatives to enhance the acquisition and use of skills during residency training through programs such community and rural posting and evaluation of the acquired skills in exit exams as the need to assess this competency in practicing paediatrician and promote its wider application" [4, 5]. "Associated factors with involvement included older age, rural practice setting, and sense of responsibility toward community pediatrics" [6,7].

"Generally this endorsement of community engagement of paediatrician, as an important aspect of professionalism has fairly translated to high involvement in community child health activities. Again, despite the formal training started since 1970; most paediatrics subspecialties professional are relatively small. Paediatrician density in 2016 was 0.5 - 6 per 100,000 children in Nigeria, as compared to global mean of 32" [6, 7]. "Paediatricians also tend to work in tertiary hospitals or in the private sector, leaving only a few for primary or district-level care, where the burden for child health care is high" [8-9]. This is inadequate with a huge child-to-paediatrician ratio of 157,878:1 nationwide, with a wider disparity in the North East zone having the highest ratio of 718,412:1. Zones of the country with lower child-to-paediatrician ratios were reported to have a lower U5MR. (10) The study concluded on the need to train more paediatricians and to promote an even distribution of the workforce [10]. It is evident that with the dearth of paediatrician to cover the specialized demand, community involvement will be rudimentary.

With the increasing awareness of the social determinants of health, this have promoted the calls for community engagement and partnership with the community among paediatricians [11, 12]. Hence community involvement by way of medical outreaches had been carried in the country through faith – based, non-governmental organizations (NGOs) like "Ask The Paediatricians foundation" [13] and professional association like Paediatrics Association of Nigeria [14]. All to promote the health and welfare of Nigerian children and attain the Sustainable Development Goal 3. However these are limited in application as it is donors/sponsor driven and whether these increasing awareness

and efforts by associations and NGOs have translated to increased involvement by paediatrician in community child health is to be ascertained.

"Paediatricians also tend to work in tertiary hospitals in cities or in the private sector, leaving a few to support primary or community health care" [7]. "In most sub-Saharan African countries, nurses and community extension workers fill the gaps and deliver over 80% of primary care [6]. This task-shifting of complex congenital defect, surgery or emergency care at the community level, may have led to delay in initiating the proper therapy and increased mortality rate of patients managed by unsupervised clinical officers and nurses" [6].

The objective of this study was to assess involvement of pediatricians in community child health activities in 2017 and to identify factors (personal, practice, and community pediatrics related) associated with participation in the past year.

2. METHODS

It was a survey of paediatrician in Nigeria, who attended the annual scientific conference 2017. The questions include involvement in community child health outside of their clinical practice. A total of 249 completed questionnaires were received (response rate of 95.7%). This was after consent was obtained. The instrument of data collection was a self-administered questionnaire.

The questionnaire consists of 4 sections, made up of 60 close – ended and multiple choice questions. Section 1. Personal Characteristics; focused on socio-economic and demographic characteristics of respondents such as age, marital status, religion, educational attainment and number of children. Section 2. Focused on Practice characteristics with reference to Primary employment type, Setting of your practice, Employment Status, Percentage of time in general Pediatrics. Section 3. involves Formal Training In Community Activities including Timing of training, rating of Paediatrician involvement, Time Willing to Spend in Child Health Activities and location. Section 4. focused on the Use of Skills for community health: Which have you used in the last 1 year?

To ensure face and content validity of the questionnaire instrument tool, two experts in community paediatrics reviewed the instrument. The harmonized version was used for the study participants and reliability was done by the test-retest reliability. The Questionnaire was administrated to the same participants on different times and the result of both was compare.It questionnaire has a high test - retest reliability in the pilot testing. There was no translation process, as English was the medium of communication and the common spoken language.

The responses were confidential with no individual identifying features and results were statistically analysed.

Survey content was informed by National and West African College faculty of Paediatrics [4, 5] training curriculum for postgraduate fellowship in Paediatrics and Child Health using community Paediatrics and Primary Health Care/School health Programme as a core area of emphasis and the review by the American Academy of Paediatrics (AAP) [3] Community Pediatrics Action Group.

Univariate statistics were calculated for survey items related time spent in community child health activity. Next Chi square statistics were generated based on cross tabulation frequencies to examine the relationship of survey items; personal and practice characteristics, community child health training and use of skills in community child health activities to gender. Logistic regression assessed the independent contributions of characteristics associated with participation in bivariate analyses ($P < .05$) Analyses were conducted by using SPSS statistical software, version 20.5 (IBM SPSS Statistics, IBM Corporation, Armonk, NY).

Ethical approval was obtained from the Ethic Committee of University of Nigeria Teaching Hospital (UNTH) Ituku – Ozalla Enugu.

3. RESULTS

Respondents personal and employment characteristics, formal training, perspectives were documented in (Table 1).

The final sample included 249 paediatricians who attended the Panconf in 2017. A greater percentage of respondents 153 (61.3%) were males and 96 (38.7%) were females. p= .004) Most were aged 51 years. A smaller percentage (11.2%) reported formal training in community child health before medical school / residency training. A larger percentage reported training at medical school (20.5%) and during residency

(60.4%) p = .004. Training reported at multiple time points). More than 198 (79.5%) of paediatricians reported feeling moderately / very responsible for child health activities (Table 1).

This is reflected now in Table 1. The characteristics of respondents associated with involvement in community child health activities included older age p = .001; not having children aged 5 years or less p = .002, practice in urban areas p = .002 and receiving any formal training p = .004. With regard to the timing of training; during fellowship was significantly associated with involvement. p = .004 (Table 1).

Table 1 have been adjusted to reflect accordingly. In 2017, fewer pediatricians practiced in rural than urban settings (12.0% vs 88.0% [p = .003]) and these spent 70% of their time in general pediatrics. Most (89.7%) worked for the government in the urban setting, with almost all (97.0%) of them in federal tertiary and Medical centres). The South West (SW) zone had the highest number (65.9%), followed by South East (SE) zone with (25.4%), the others zones and the Federal Capital Territory accounted for (8.7%) of practicing paediatricians. More than two thirds of the paediatricians 178 (71.6%) were practicing in the south of the country.

Among those involved in community child health activities, a larger percentage was on a voluntary basis rather than paid (89.2%; P = 0.03). In the assessment of the 6 skills use in community child activities, 3 of the skills/specific activities were significant. These were; medical mission provider (male/female = 33.3% / 44.8%; p = .001) followed by use computer/Internet to find information (male/female = 22.9% / 12.5%; p = .001) and involvement as member of interdisciplinary team in child advocacy (male/female = 3.9% / 4.2%; p = .002) and 49.7% males 61.4% of females reported being willing to spend at least 3 hour/month in community child health activities (Table 2).

Table 1. Respondents Personal Characteristics, timing of training and level of responsibility with community child health activities

Personal Characteristics/Community Child health activities	Overall (N= 249)%	Male (n=153)%	Female (n= 96) %	p-value
Age				
≤30 years	(10)4.0	(9)6.0	(1)1.0	**.001**
31-40 years	(25)10.5	(17)11.1	(8)8.3	
41-50years	(75)30.0	(41)26.7	(34)35.4	
≥51 years	(139)55.5	(86)56.2	(53)55.2	
Marital Status				
Married	(218) 87.5	(129)84. 3	(89)92.7	.288
Single	(21)8.4	(16)10.5	(5)5.2	
Widowed/separated/divorced	(10)4.1	(8)5.2	(2)2.1	
Community setting				
Urban	(219) 88.0	(132) 86.2	(79) 82.2	**.003**
Rural	(30) 12.0	(21) 13.7	(17) 17.7	
Youngest Child ≥ 5 years				
Yes	(160) 64.2	(106) 69.2	(54) 56.2	**.002**
No	(89) 35.7	(50) 32.6	(39) 40.6	
Timing of formal training in community activities				
Before medical school	(4) 1.6	(3) 1.9	(1) 1.0	
During medical school	(29) 11.6	(20) 13.1	(9) 9.4	
During Residency	(199) 80.2	(121) 79.1	(78) 81.2	**.004**
Since completing training	(12) 4.6	(9) 5.8	(3) 3.1	
No training	(5) 2.0	(0) 0	(5) 5.2	
Perspectives on view of child health responsibility				
Very responsible	(71) 28. 5	(49) 32.0	(22) 22.9	120
Moderately responsible	(127) 51.0	(69) 45.0	(58) 60.4	
Little responsible	(43) 17.3	(28) 18.4	(15) 15.7	
None	(8) 3.2	(7) 4.6	(1) 1.0	
Overall Involvement in community child activities	(94) 37.8	(63) 41.2	(31) 32.2	**0.001**

Table 2. Willingness in community involvement and skills use

Items	Male (n=153) %	Female (n=96) %	p -value
Time willing to spend in child health activities			
>5 hours/month	(8) 5.2	(22) 23.0	.032
4—5 hours/month	(23) 15.0	(13) 14.0	.114
1—3 hours/month	(76) 49.7	(59) 61.4	**.002**
<1 hour/month	(46) 30.0	(2) 2.0	179
Use of skills			
Access resources for Children	(15)9.8	(11) 11.5	.011
Medical Mission participation	(51)33.3	(43)44.8	**.001**
Involvement in School health programme	(15)9.8	(5)5.2	.027
Use population-level data to understand the epidemiology of children's health and illness	(26)17.0	(13) 13.5	118
Member of interdisciplinary team/participate in team building to promote children's health in the community	(6)3.9	(4) 4.2	**.002**
Speak publicly on behalf of children's health	(5)3.3	(8) 8.3	.969
Use computer/Internet to find information about child health policy and related activities	(35) 22.9	(12) 12.5	**.001**

Table 3. Involvement in community child heath activities by respondent's characteristics

Personal characteristics	Odds Ratio (95% Confidence Interval)	Crude Odd ratio	p-valve
Age			
≤ 30 years	Referent		
31—40 years	1.45 (0.63 - 3.19)	2.22	0.11
41—50 years	1.43 (0.76 - 2.67)	1.45	0.07
≥ 51 years	**2.29 (0.11 - 4 .50)**	3.20	**0.01**
Children ≥ 5 years in household	Referent		
No			
Yes	1.13 (0.73 – 1.76)	1. 45	0.53
Community setting			
Suburban	Referent		
Urban	1.48 (0.93—6.36)	3.09	0.12
Rural	3.26 (0.83—2.91)	2.15	0.30
Primary employment type			
Private hospital/clinic	Referent		
Solo or 2 physician	2.55 (0.39—4.61)	2.30	0.45
Multispecialty	2.67 (1.00—6.58)	4.05	0.12
Government hospital	1.23 (1.00 – 3.34)	1.35	0.24
Other	2.45 (0.63—3.69)	2.75	0.11
Training			
None	Referent		
Any formal training	**1.29 (0.32—0 .80)**	0.45	**0.02**
Responsibility for child health	Referent		
A little/not at all			
Moderately/very High	1.43 (1.00 - 2.67)	2.23	0.34
Skills used			
≤2	Referent		
>2	2.13 (1.01 – 3.10)	1.05	**0.01**

Overall, a smaller percentage of pediatricians 94 (37.8%) reported involvement in community child health activities in the year under review, with male preponderance (Table 1).

In adjusted analyses, there was an increase in each age subgroup, with a higher odds ratio among pediatricians 51 years old OR = 2.29 (0.11 – 0.50) and formal training OR = 1.29 (0.32 – 0.80) Formal training was associated with higher numbers of skill used. However, participation was associated with higher number of skills used (P < .001 for all 6 skills) (Table 3).

4. DISCUSSION

This study shows low involvement in community child activities by paediatricians in Nigeria. This is reflected in Table 1.

However, higher involvement was reported by older pediatricians, practicing in urban settings, and who had received formal training. These associations especially with formal training have been noted abroad [15, 16]. This index study is a Nigerian survey with similar positive association between formal training and pediatricians' involvement in community child health activities. The increased odds of formal training with community child health activities show the value chain of this modifiable factor. Not surprisingly, the skills and competencies the paediatrician acquired from formal training positively impacted on community child health activities. This is reflected in Table 1. This shows that community paediatrics training focused on skills and competencies acquisition; will positively impact on the paediatricians attitudes and involvement in community child health activities [13, 14].

The influence of age on increased involvement as seen in this index study as involvement was significant in the older age ≥ 51 years with odd ratio 2.29 CI (0.11- 4.50) p = 0.01, seen in Table 3; have been observed by some authors [15, 16]. This may highlight the need for an individual to be well establishment in clinical practice and other personal aspirations before involvement in community activities. The community child health activities engaged by these pediatricians were also mostly on voluntary basis. Many young paediatrician may find it challenging to volunteer, as they are young families with relatively younger children and probably still establishing new practices. Incentives to facilitate participation of these younger paediatricians will be necessary.

Another study showed that the State or area of residency training was associated with subsequent involvement in that same State [17]. This was also noted in the index study, as the Southern part of the Nation had many paediatrician, as this was the setting of their residency training. This also translates to greater involvement in community child health activities in that area.

The timing of training in this survey varies. Residency was the most common reported time for training. This was also reported by some authors [18, 19]. This is to be expected, as Residency programs provide experiences that prepare residents for the role of child's advocacy within the community. This also lends credence to postgraduate residency requirement and Residency Review Committee of postgraduate Colleges to set structured skill and competencies for continuing advocacy for children's health in the community [18, 19].

Paediatricians' involvement in community child health activities has taken on great importance in the Western world, especially in the USA, following the implementation of the Affordable Care Act [20]. Now paediatrician with competence in community diagnosis and a member of interdisciplinary team may fit well into collaboration with non - profit hospital required in community health planning. Paediatrician skills in public health analysis can contribute to pivotal health benefit policies and packages for the rights of children in the community.

The situation especially in Nigeria and some other Africa countries is still rudimentary, where ratification of the child right act is yet to be completely accepted with dearth of structural framework and Acts [21-23]. Paediatricians involvement in community child health activities are at the level of associations and individually managed non - profit organizations [13, 14]. Examples include Paediatricians association of Nigeria (PAN), Ask The Paediatricians Foundation and tertiary institutional welfare units. These have operations in fulfilling the Sustainable Development Goal 3 via evidence-based health information and communication to parents and care giver of children, support of vulnerable children through community medical missions and social projects in indigent communities and empowering of healthcare professionals working with children. There is a dare need to up these operations by an Act of policy framework. As despite efforts at improving

child health care, the journey so far has remain unimpressive [21, 22]. Several factors such as Low income, accelerates level of poverty, food insecurity, political instability, have contributed significantly to poor measurable health indicators in Nigeria [24, 25].

5. LIMITATION OF THE STUDY

The study design is descriptive cross-sectional and inadequate to establish causality. Hence the factors identified cannot be conclusively said to predict causality in involvement. There is a risk of potential response bias and respondents may overestimate their extent of community involvement. This should have been ameliorated by comparing respondents and non-respondents demographic variables as case and control. This was not done, as it was a captive audience with negligible non respondents. Although, we have no reason to suspect response - bias in respondents. A combination of Web-based and mailed administration of questionnaire might have increased participation. However, the above notwithstanding; this index study provides a basis for understanding paediatricians' involvement in community child health activities.

6. CONCLUSIONS

The association of formal training especially during residency and older age with community child heath activities is a pivotal signage. It may show that training in community paediatrics is crucial to support community child health activities in the face of challenging confounding variables from practice environments. Therefore, intensification of advocacy skills and competencies for all residents and retraining of paediatrician for refreshing of experiences and related skills is advocated.

CONFERENCE DISCLAIMER

Some part of this manuscript was previously presented and published in the conference: 52nd- 53 rd Annual General and Scientific Conference of the Paediatrics Association of Nigeria (PANCONF), 18th - 22nd January, 2022. Web Link of the proceeding: https://www.ajol.info/index.php/njp/article/view/230774

ETHICS APPROVAL

Ethical approval was obtained from the Health Research Ethics Committee of the University of Nigeria Teaching Hospital, Ituku- Ozalla, Enugu. Informed written consents were obtained from participants.

CONSENT

Informed written consents were obtained from participants.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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