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Perceptions and Practices of Primary Ear and Hearing Care among Otolaryngologists and other ear care professionals in Nigeria

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Abstract: Primary Ear and Hearing Care (PEHC) is an initiative aimed at reducing the burden of hearing loss and ear diseases. The initiative aims at extending PEHC into all regions that need it, devising global level guidelines with training packages and materials that can be adapted to regional and national needs, linking Primary Ear and Hearing Care with strategies for prevention as part of Primary Health Care (PHC), and encouraging PEHC guidelines to be a component of each national plan for prevention and control of diseases. Unfortunately, despite its development more than 20 years ago and the increasing challenges of ear and hearing diseases, PEHC has not been implemented in most World Health Organization member countries including Nigeria. This pilot study is a survey to investigate the perceptions and practices of PEHC among ear-care professionals in Nigeria. Most respondents (64.5%) knew about PEHC but a lower proportion (30.3%) knew of the World Health Organization PEHC training manuals Even fewer (13.2%) had ever read the manuals or used them (5.3%). About half however reported that their institutions run primary ear care outreach programmes and 75% indicated a willingness to participate in advocacy programmes for PEHC. There were no significant associations of the perceptions and practices with geographical location, specialty, type of institutions in which respondents practice and whether or not they were academicians ($p>0.05$). The study findings suggest that there is a poor primary ear care network in place in Nigeria. Further studies to lean more and new and innovative approaches to establish PEHC in Nigeria are recommended.
Keywords: Primary Ear and Hearing Care, Primary Health Care, Hearing loss, Ear diseases, Prevention of deafness

INTRODUCTION

Primary Ear and Hearing Care (PEHC) is an initiative aimed at reducing the burden of hearing loss and ear diseases. Good PEHC is absent throughout most of Sub-Saharan Africa [1] and the implications are many. These implications include the late detection, or failure of detection, of congenital hearing loss in children [2], exposure to potentially life-threatening complications of ear disease and chronic ear disease, and disabling deafness with its attendant consequences of hindrance to language and speech development, communication, educational achievement, skills acquisition and emotional and social wellbeing in children [3], difficulties in obtaining, performing and keeping an occupation, social isolation and stigmatization in all ages, extreme isolation in the elderly [4], and profound social and economic effects in communities and countries [3, 5-9].

PEHC was developed to address these challenges as a direct result of the workshop on "Prevention of Hearing Impairment from Chronic otitis media", which recommended cost effective prevention, early detection and management of Chronic Otitis Media and its sequelae (especially, chronic hearing impairment) in the community and at the primary level of health care, through targeting risk factors and implementing Primary Ear Care. The first Cape Town International Workshop on Primary Ear Care was held in March 1996 under the auspices of the University of Cape town with the collaboration of the World Health Organization [1]. The main recommendations of the workshop were summarized in "the Cape Town declaration" [1]. They included extending PEHC into all regions that need it, devising global level guidelines with training packages and materials that can be adapted to regional and national needs, linking PEHC with strategies for prevention as part of Primary Health Care (PHC), and encouraging PEHC guidelines to be a component of each national plan for prevention and control of diseases. The World Health Organization has since developed basic, intermediate and advanced level training manuals for Primary ear and Hearing Care [10]. and a protocol for studying ear and hearing disorders [11].

Even though the Cape Town Declaration has been made since 1998, the challenge of establishing

PEHC is still huge. According to a recent WHO survey, there is an overall scarcity of epidemiological evidence of hearing loss and ear disease in member states, a lack of information related to human resources for ear and hearing care as well as national/subnational plans/programs among member states, and National committees to promote and develop plans for ear and hearing care are on place in only 20 of the 76 member states that participated in the survey through their ministries of health, and implementation of such plans are in place in 32 of the responding countries. The most common reason cited for lack of programs was not lack of need, but other health priorities and lack of financial/human resources [12]. As an initial step to map out the challenges of establishing PEHC in Nigeria, this pilot study investigates the perceptions and practices of PEHC among ear-care professionals in Nigeria.

SUBJECTS AND METHODS

The study was a institutionally approved cross sectional survey. The target population was ear care workers in Nigeria while the study population comprised volunteer ear-care workers at a conference of the Otorhinolaryngology Society of Nigeria (ORLSON). Data was collected with a self-administered semi-structured questionnaire which had been reviewed by two Otolaryngologists and an ethics specialist and revised according to their suggestions. The major outcome variables were "knowledge of PEHC (yes/no)", "knowledge of PEHC Manuals (yes/no)", "Ever read the PEHC Manuals (yes/no)?", "Ever used the PEHC Manuals (yes/no)?" "Does your Institution conduct any outreach programs (yes/no) and "Are you willing to participate in advocacy for PEHC as part of primary care in Nigeria?". Independent variables included socio-demographic variables, length of practice, discipline/specialty within ear care, type of institution (public/private) and involvement with academics.

Data entry, cleaning and analysis were done with the Statistical Package for the Social Sciences (SPSS) version 15. Data analysis was univariate (proportions, means and standard deviations, medians and ranges) and bivariate (crosstabs). All analysis was done at 0.05 level of significance.

RESULTS

Seventy-six volunteers completed the questionnaires. There were slightly more females than males (M: F=1:1.2). The mean age of respondents was 37.6 years (SD=8.2 years) and the median length of practice in the respondents' disciplines was 6.5 years (range=19 years). Half of the respondents were from South-West Nigeria, 42.1% were ENT Consultants or Registrars, most (78.9%) worked in public institutions, and 34.2% were in academics. Table 1 shows the frequency distribution of these predictor variables.

Table 1: Frequency distribution for major predictor variables

Variable	Frequency	Percentage
Geographic Areas		
North	15	19.7
South West	38	50.0
South South	14	18.4
South East	9	11.8
Total	76	100.0
Discipline/Specialty		
ENT Consultant/Registrar	32	42.1
Nurse/Audiologist/Speech Therapist	28	36.8
Others	16	21.1
Total	76	100.0
Institution type		
Public	60	78.9
Private	16	21.1
Total	76	100.0
In Academics?		
Yes	26	34.2
No	50	65.8
Total	76	100.0

The proportion of respondents with knowledge about PEHC was 64.5%. However, the proportion who had knowledge of PEHC manuals was only 30.3% and the proportion who had ever read the manuals even less (13.2%). Only a very small proportion (5.3%) reported having ever used the PEHC manuals. About half however reported that their institutions run primary ear care outreach programmes and 75% indicated a willingness to participate in advocacy programmes for PEHC. Table 2 shows the frequency distribution of the outcome variables.

Table 2: Frequency distribution for outcome variables

Variable	Frequency	Percentage
Knowledge of PEHC		
Yes	49	64.5
No	27	35.5
Total	76	100
Knowledge of PEHC Manuals		
Yes	23	30.3
No	53	69.7
Total	76	100
Ever read the PEHC Manuals?		
Yes	10	13.2
No	66	86.8
Total	76	100
Ever used the PEHC Manuals?		
Yes	4	5.3
No	72	94.7
Total	76	100
Does your institution conduct outreaches?		
Yes	39	51.3
No	37	48.7
Total	76	100.0
Willingness for PEHC Advocacy		
Yes	57	75.0
No	19	25.0
Total	76	100.0

The highest proportion with knowledge about PEHC was among respondents from the North, ENT Consultants and Registrars, respondents working in the private sector and academicians. However, the relationships were not statistically significant. For knowledge about the PEHC Manuals, the highest proportion was among respondents from the North, the Nurse/Audiologist/Speech therapist group, respondents working in the public sector and academicians but the relationships were also not statistically significant (Tables 3 and 4).

Table 3: Cross-tabulation of Geopolitical Zone, Occupation group, Institutional affiliation and Academic involvement with Knowledge of PEHC

Variable	Knowledge of PEHC		Total (%)	X^2	P value
	Yes (%)	No (%)			
Geopolitical Zone					
North	10 (66.7)	5 (33.3)	15 (100)	1.964	0.593*
South west	25 (65.8)	13 (34.2)	38 (100)		
South south	7 (50.0)	7 (5.4)	14 (100)		
South east	7 (77.8)	2 (22.2)	9 (100)		
Occupation					
ENT Surgeon/Resident	22 (68.8)	10 (31.3)	32 (100)	0.728	0.695
Nurse/Audiologist/Speech Therapist	18 (64.3)	10 (35.7)	28 (100)		
Others	9 (56.3)	7 (43.8)	16 (100)		
InstitutionType					
Public	38 (63.3)	22 (36.7)	60 (100)	0.162	0.688
Private	11 (68.8)	5 (31.3)	16 (100)		
Academic					
Yes	20 (76.9)	6 (23.1)	26 (100)	2.674	0.102
No	29 (58.0)	21 (42.0)	50 (100)		

* - Fisher's exact test

Table 4: Cross-tabulation of Geopolitical Zone, Occupation group, Institutional affiliation and Academic involvement with Knowledge of PEHC Manuals

Variable	Knowledge of PEHC Manuals		Total (%)	X^2	P value
	Yes (%)	No (%)			
Geopolitical Zone					
North	7 (46.7)	8 (53.3)	15 (100)	6.562	0.081*
South West	11 (28.9)	27 (71.1)	38 (100)		
South South	1 (7.1)	13 (92.9)	14 (100)		
South East	4 (44.4)	5 (56.6)	9 (100)		
Occupation					
ENT Surgeon/Resident	10 (31.3)	22 (68.8)	32 (100)	3.458	0.190*
Nurse/Audiologist/Speech Therapist	11 (39.3)	17 (60.7)	28 (100)		
Others	2 (12.5)	14 (87.5)	16 (100)		
Institution Type					
Public	19 (31.7)	41 (68.3)	60 (100)	0.266	0.606
Private	4 (25.4)	12 (75.0)	16 (100)		
Academic					
Yes	11 (42.3)	15 (57.7)	26 (100)	2.717	0.099
No	12 (24.0)	38 (76.0)	50 (100)		

* - Fisher's exact test

Likewise, the associations between the various predictor variables and "Ever read the PEHC Manuals?" and between them and "Ever used the PEHC Manuals" were not found to be statistically significant (Tables 5 and 6). For "Ever read the PEHC Manuals?", the largest proportion was found among respondents from the South-West, Nurse/Audiologist/Speech therapist group, Public sector workers and academicians. For "Ever used the PEHC Manuals?", the largest proportion was found among respondents from the North, Nurse/Audiologist/Speech therapist group, Public sector workers and academicians.

Table 5: Cross-tabulation of Geopolitical Zone, Occupation group, Institutional affiliation and Academic involvement with "Ever read the PEHC Manuals?"

Variable	Reading of PEHC Manuals		Total (%)	X^2	P value
	Yes (%)	No (%)			
Geopolitical Zone					
North	2 (13.3)	13 (86.7)	15 (100)	0.669	0.955*
South West	6 (15.8)	32 (84.2)	38 (100)		
South South	1 (7.1)	13 (92.9)	14 (100)		
South East	1 (11.1)	8 (88.9)	9 (100)		
Occupation					
ENT Surgeon/Resident	4 (12.5)	28 (87.5)	32 (100)	1.075	0.565*
Nurse/Audiologist/Speech Therapist	5 (17.9)	23 (82.1)	28 (100)		
Others	1 (6.3)	15 (93.8)	16 (100)		
Institution Type					
Public	8 (13.3)	52 (86.7)	60 (100)	0.008	0.930
Private	2 (12.5)	14 (87.5)	16 (100)		
Academic					
Yes	5 (19.2)	21 (80.8)	26 (100)	1.276	0.259
No	5 (10.0)	45 (90.0)	50 (100)		

* - Fisher's exact test

Table 6: Cross-tabulation of Geopolitical Zone, Occupation group, Institutional affiliation and Academic involvement with "Ever used the PEHC Manuals?"

Variable	Use of PEHC Manuals		Total (%)	X^2	P value
	Yes (%)	No (%)			
Geopolitical Zone					
North	2 (13.3)	13 (86.7)	15 (100)	2.899	0.271*
South West	1 (2.6)	37 (97.4)	38 (100)		
South South	1 (7.1)	13 (92.9)	14 (100)		
South East	0 (0)	9 (100.0)	9 (100)		
Occupation					
ENT Surgeon/Resident	1 (3.1)	31 (96.9)	32 (100)	0.864	0.827*
Nurse/Audiologist/Speech Therapist	2 (7.1)	26 (92.9)	28 (100)		
Others	1 (6.3)	15 (93.8)	16 (100)		
Institution Type					
Public	4 (6.7)	56 (93.3)	60 (100)	1.126	0.289
Private	0 (0)	16 (100.0)	16 (100)		
Academic					
Yes	1 (3.8)	25 (96.2)	26 (100)	0.159	0.690
No	3 (6.0)	47 (94.0)	50 (100)		

* - Fisher's exact test

For "Does your institution conduct outreaches?", the largest proportion of positive respondents was found among respondents from the South-South, the Nurse/Audiologist/Speech therapist group, public sector workers and non-academicians. For "Willingness to participate in Advocacy", the largest proportion of positives was found among respondents from the North, the Nurse/Audiologist/Speech therapist group, equally among public and private sector workers, and among academicians. These relationships were also not statistically significant (Tables 7 and 8).

Table 7: Cross-tabulation of Geopolitical Zone, Occupation group, Institutional affiliation and Academic involvement with "Ever read the PEHC Manuals?"

Variable	Reading of PEHC Manuals		Total (%)	X^2	P value
	Yes (%)	No (%)			
Geopolitical Zone					
North	2 (13.3)	13 (86.7)	15 (100)	0.669	0.955*
South West	6 (15.8)	32 (84.2)	38 (100)		
South South	1 (7.1)	13 (92.9)	14 (100)		
South East	1 (11.1)	8 (88.9)	9 (100)		
Occupation					
ENT Surgeon/Resident	4 (12.5)	28 (87.5)	32 (100)	1.075	0.565*
Nurse/Audiologist/Speech Therapist	5 (17.9)	23 (82.1)	28 (100)		
Others	1 (6.3)	15 (93.8)	16 (100)		
Institution Type					
Public	8 (13.3)	52 (86.7)	60 (100)	0.008	0.930
Private	2 (12.5)	14 (87.5)	16 (100)		
Academic					
Yes	5 (19.2)	21 (80.8)	26 (100)	1.276	0.259
No	5 (10.0)	45 (90.0)	50 (100)		

* - Fisher's exact test

Table 8: Cross-tabulation of Geopolitical Zone, Occupation group, Institutional affiliation and Academic involvement with "Ever used the PEHC Manuals?"

Variable	Use of PEHC Manuals		Total (%)	X^2	P value
	Yes (%)	No (%)			
Geopolitical Zone					
North	2 (13.3)	13 (86.7)	15 (100)	2.899	0.271*
South West	1 (2.6)	37 (97.4)	38 (100)		
South South	1 (7.1)	13 (92.9)	14 (100)		
South East	0 (0)	9 (100.0)	9 (100)		
Occupation					
ENT Surgeon/Resident	1 (3.1)	31 (96.9)	32 (100)	0.864	0.827*
Nurse/Audiologist/Speech Therapist	2 (7.1)	26 (92.9)	28 (100)		
Others	1 (6.3)	15 (93.8)	16 (100)		
Institution Type					
Public	4 (6.7)	56 (93.3)	60 (100)	1.126	0.289
Private	0 (0)	16 (100.0)	16 (100)		
Academic					
Yes	1 (3.8)	25 (96.2)	26 (100)	0.159	0.690
No	3 (6.0)	47 (94.0)	50 (100)		

* - Fisher's exact test

DISCUSSION

The medical effects of ear disease, the problem of hearing impairment and deafness, and the economic implications of ear disease and hearing loss provide justification for this study. According to the World Health Organization statistics, there were 120 million individuals with a disabling hearing loss globally in 1995. By 2005, this figure had doubled to 278million. And by 2011, the number had increased to 360 million people (5.3% of the world's population, 32 million of which are children). If milder cases of hearing loss are included, almost 10% of the world population are affected by hearing loss. [5, 6, 13]. According to the WHO global burden of disease [6], adult-onset hearing loss ranks third on the global causes of years lived with disability (YLD) index and 15th on the disability adjusted life-years (DALY) index (one of four non-fatal conditions among the 20 leading contributors to the global burden of disease). Approximately one-third of people over 65 years of age are affected by disabling hearing loss, and sub-Saharan Africa has one of the greatest prevalence figures for this age group [14]. In addition, 50% of the factors which lead to hearing loss can be prevented [1] and a large number of those affected by hearing loss can be benefitted through prompt treatment and rehabilitation.

Hearing impairment is of such global importance that the World Health Organization is actively involved in promoting surveys and gathering data for measuring the burden of hearing impairment, developing strategies for prevention, raising awareness, knowledge and skills among health workers and assisting countries to develop national programs for the control. In addition, there is an ongoing global mapping of the prevalence of hearing impairment by the WHO [15]. This study aims to contribute knowledge to bridge the gaps that exist at our local level.

According to the WHO Multi-Country Assessment of National Capacity to provide hearing Care, Nigeria is one of the countries in which there is very little epidemiological evidence of hearing loss and ear disease, no National Committee for ear and hearing care or national/sub-national plan or program for ear and hearing care and hearing loss prevention [12]. In Nigeria, there have some programmes reaching out to the Primary care level, principally through screening activities in schools and infant clinics [16, 17] or through activities on occasions like the World Ear Care day but these are not widespread and often single rather than sustained programmes.

As is obvious from this study, even though the knowledge of PEHC is high among ear-care professionals, there is little knowledge about the resources available, and consequently the resources are not used. Even though the World Health Organization PEHC training manuals have been launched in Nigerian [18], this study suggests that only a small proportion of ear care workers in Nigeria have heard about these training manuals, less have read or gone through the manuals and even less have used them.

According to the WHO, these PEHC resource manuals have been adapted, translated and widely and used by China. India has also undertaken their adaptation as part of the activities of India's National Plan for Prevention and Control of Deafness. WHO also states that the basic level resource has also been translated into number of languages within India including Hindi, Tamil, Telugu, Gujarati, Kannada and Manipuri [18]. These are examples of the PEHC policy being adapted locally in the world's leading populous countries. Nigeria is the most populous country in Africa and consequently the burden of hearing loss and ear diseases is proportionately high and there is a need to create a structure to implement PEHC in the country.

This study suggests that because of the awareness of the need for improved primary ear and hearing care among ear care workers in Nigeria, ear care workers in various institutions have ear care outreach programs based in their institutions. These are commendable and the efforts suggest that this may be an alternative model to a government-driven model which incorporates PEHC into the nation's primary care system. Such a model can be planned and coordinated by the professional society as an interim strategy before a government implemented programme takes off and also possibly act as subsequent adjuncts to government programmes. An innovation of this sort is needed as the needs are urgent.

The limitations of this study lie in the fact that the respondents are comprised of volunteers, may have a self-selection bias and may not be an accurate representation of the true situation. It is however designed to be a pilot study upon which more extensive studies would be built. Also, while the population size may appear small, the respondents actually represent a significant well-informed cross-section of the target population. Lessons learned from this study therefore remain a good foundation to build upon for future studies and PEHC programs in Nigeria

CONCLUSION

Diseases of the ear and hearing, especially disabling heating loss constitute a serious public health emergency in the world today. Unfortunately, there are few programmes addressing the problem and there is very little epidemiological data about these problems or about the services that are available to tackle them. The problem is worse in developing countries like Nigeria which at present does not even have a plan to address the situation despite the promotion of the PEHC initiative by the WHO. This study has confirmed the problems and ear care workers are urged to create innovative institution-based models of instituting PEHC. Such models can be planned and coordinated by the professional society as an interim strategy before a government implemented programme takes off and also possibly act aa subsequent adjuncts to government programmes

REFERENCES

1. World Health Organization. Report of the International Workshop on Primary Ear and Hearing Care, Cape Town, South Africa, 12-14 March 1998, World Health Organization, Geneva; 1998.
2. Olusanya BO, Wirz SL, Luxon LM. Community-based infant hearing screening for early detection of permanent hearing loss in Lagos, Nigeria:A cross-sectional study. Bulletin of the World Health Organization. 2008; 86(12): 956-963.
3. Olusanya BO, Newton VE. Global burden of childhood hearing impairment and disease control priorities for developing countries. The Lancet. 2007; 369(9569): 1314–1317.
4. Mills JH, Lambert PR. Presbyacusis. In: Snow JB & Ballenger JJ, Editors, Ballenger's Otorhinolaryngology – Head and Neck Surgery. Sixteenth Edition. Ontario: BC Decker, 2003; 443 – 445.
5. World Health Organization. Deafness and hearing impairment. Geneva, World Health Organization, WHO Fact Sheet No. 300; 2006.
6. World Health Organization. The global burden of disease: 2004 update. World Health Organization, Geneva; 2008.
7. Swanepoel D. Infant hearing loss in developing countries – A silent health priority. Audiology Today. 2008;20 (3): 16–8.
8. Olusanya BO, Ruben RJ, Parving A. Reducing the burden of communication disorders in the developing world: an opportunity for the millennium development project. Journal of the American Medical Association. 2006; 296(4): 441–444.
9. Lopez A, Mathers C, Ezzati M, Jamison D, Murray C. Global burden of disease and risk factors. New York: Oxford University Press; 2006.
10. World Health Organization. Primary ear and hearing care training manuals. World Health Organization, Geneva; 2006.
11. World Health Organization. WHO Ear and Hearing disorders survey protocol for a population-based survey of prevalence and causes of deafness and hearing impairment and other ear diseases. Prevention of Blindness and Deafness, World Health Organization, Geneva; 1999.
12. World Health Organization. Multi-Country Assessment of National Capacity to provide hearing Care. World Health Organization, Geneva; 2013.
13. World Health Organization. World health statistics 2010. World Health Organization, Geneva; 2010.
14. World Health Organization. Hearing loss in persons 65 years and older, WHO global estimates on prevalence of hearing loss, Mortality and Burden of Diseases and Prevention of Blindness and Deafness, WHO, Geneva; 2012.
15. World Health Organization. Progress of Population-based surveys using The WHO Ear and Hearing Disorders Survey protocol. WHO.int c 2014. Available at www.who.int/blindness/mapofsurveys.pdf
16. Olusanya BO, Okolo AA, Ijaduola GTA. The Hearing Profile of Nigerian School Children. Int J. Pediatr Otorhinolaryngol. 2000; 55: 173-1799.
17. Olusanya BO, Wirz SL, Luxon LM. Community-based infant hearing screening for early detection of permanent hearing loss in Lagos, Nigeria: A cross-sectional study. Bulletin of the World Health Organization. 2008; 86: 956-963.
18. World Health Organization. Prevention of blindness and deafness. Available at http://www.who.int/pbd/deafness/activities/hearing_care/en.