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Childhood hearing loss; a need for primary health care

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ABSTRACT

Introduction: Essential health care for children is the care of the ear.
Methods: A cross-sectional descriptive study of 155 children with hearing loss.
Results: A total of 155 pupils with hearing impairment and their parents were interviewed; 77(49.7%) males and 78(50.3%) females, age ranged from 6 to 15years (mean 9.11 ± 2.5 years). None of the participants had neonatal hearing screening. Parents detected the hearing loss at a mean age of 2.3 ± 1.1years. Initial care was given by community health workers and general medical practitioners, only 21 participants had otolaryngological consultation and none had audiological rehabilitation. Barriers to accessing services were financial constraints, poor awareness and non-availability of otolaryngological service for the hearing impaired in the communities.
Conclusion: Hearing impaired children in Nigeria have poor access to ear care. There is a need to create awareness of otological services and incorporate ear-care into the primary health care.

1. Introduction

Hearing loss impairs functional development and educational attainment of children in developing countries, while Otological care improves hearing status. However, an individual's participation in health care services is based on self -decisions influenced by treatment information [1].

Early diagnosis of hearing impairment in children and early intervention are crucial for communicative performance [2]. The clinical intervention for hearing impairment ought to have started within the first six months of life, for the attainment of the hearing potential of the child [3]. The effective hearing rehabilitation and the family expectations is related to socioeconomic and cultural factors [3,4]. Communication barrier is a challenge experienced by hearing impaired people [5], and the hearing rehabilitation aimed at the acquisition of oral language. The Nigerian government is committed to quality and accessible public health services through provision of primary health care, as well as provision of preventive and curative services [6], with the intention of equity and easy access; regrettably, the rural populations in Nigeria are seriously underserved when compared with their urban counterparts [7].

This study assessed the experiences of parents/care givers with hearing impaired children, in accessing Otological health care services in Nigeria.

2. Methods

A cross sectional study in four randomly (balloting) selected primary schools for hearing impaired children in Ibadan and Ogbomoso, Oyo state, Nigeria. Hearing impaired pupils who met the inclusion criteria of using sign language as their primary means of communication were recruited. Hearing impaired pupils with intellectual impairment, visual impairment and learning disabilities were excluded. Students in the selected schools were recruited by systematic random sampling technique; Alternate blocks of classroom were selected for the study in each school and the participants in each classroom were recruited by asking the pupils to pick a ballot - yes or no. A consent form was giving to the selected pupils to be signed by the parents, those that returned the consent form participated in the study along with their parents. A certified interpreter was recruited as research assistant and trained on data gathering using an interviewer-administered questionnaire. This questionnaire was administrated in sign language by the otolaryngologist and the interpreter. Data obtained includes socio-demographic characteristics, experiences accessing otological

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health care services, whether they had ever visited any facility for otological care, barriers to access otological health care, the services received and limitations encountered. The study was over a 6 month period (May - October 2014). An informed written consent was obtained from the parents/care givers.

2.1. Validity and reliability of instrument

A draft of the developed questionnaire was subjected to reviews from peers, after which it was pre-tested. The pretested questionnaire was subjected to a reliability test using the Cronbach's Alpha model and reliability co-efficient of 0.761was obtained.

2.2. Data analysis

The IBM-SPSS version 20 was used in analyzing the data and the results were represented in tables and proportions. The test of association was done using chi-square and Mann-Whitney *U* test, with the level of significance at $p < 0.05$.

2.3. Ethical considerations

University of Ibadan/University College Hospital (UI/UCH) Health Research Ethics Committee approved the study (Ref No UI/EC/13/0344).

3. Results

A total of 155 pupils with hearing impairment and their parents were interviewed; consisting of 77(49.7%) males and 78(50.3%) females, the age ranged from 6 to 15years (mean 9.11 ± 2.5 years) as shown in Table 1. The onset of hearing loss ranged from 3 months to 6 years of age (mean 2.3 ± 1.1 years). The factors for the hearing loss includes febrile illness 87(56.1%), skin rashes with fever 2(1.3%), familial/hereditary 8(5.2%), head injury 8 (5.2%), and 34(21.9%) had unknown risk factors for the hearing loss, while 16(10.3%) attributed the hearing loss to spiritual attack (diseases from gods/evil spirit) as shown in Table 2.

Medical treatment was received by 121(78.1%) participants at the onset of the hearing loss, from the general practitioners and community health workers, while 34(21.9%) had non-medical care , as shown in Table 1. Only 57.0% (69 vs. 121) participants were referred to otolaryngologist; of which only 30.4% (21 vs. 69) had access to otolaryngology care.

Access to otorhinolaryngological services were limited by high cost of hospital care (97%), poor hearing impairment-friendly services in health facilities (67%), and poor awareness of otological services in Nigeria communities(23%).

The otolaryngologist advised 42.9% (9 vs. 21) of them on cochlear implants while 33.3% (7 vs. 21) participants were counsel on trial of hearing aid for amplification, and 5(23.8%) were unable to afford the cost of basic investigations for accessing their hearing status by the otolaryngologist.

None of the participants used hearing aid or had surgical care to improve their hearing status, due to financial constraints 38.1% (8 vs. 21), none availability of hearing aid 2(9.4%), phobia for surgery 23.8% (5 vs. 21), and 28.6% (6 vs.21) opted for alternative care. The parental educational level ($p = 0.54$) as shown in Table 1 and the attributed risk factor for the hearing loss ($p = 0.67$), as shown in Table 3 did not influence the choice of facility for health care at the onset of hearing loss (Table 4), but the socioeconomic status ($p < 0.001$).

4. Discussion

None of these children had hearing assessment at birth, the hearing losses were detected by the parents. There were no gender differences in the occurrence of hearing loss in this study. Neonatal hearing assessments determine the hearing of a child [8], and

Table 2
Gender and the attributed risk factors for hearing loss.

Risk factors for hearing loss	Sex		Total
	Male	Female	
Skin rashes	0(0.0%)	2(1.3%)	2(1.3%)
Febrile illness	45(29.0%)	42(27.1%)	87(56.1%)
Spiritual attack	11(7.1%)	5(3.2%)	16(10.3%)
Hereditary	6(3.9%)	2(1.3%)	8(5.2%)
Head injury	3(1.9%)	5(3.2%)	8(5.2%)
Others	12(7.7%)	22(14.2%)	34(21.9%)
Total	77(49.7%)	78(50.3%)	155(100.0%)

$X^2 = 10.7$ df = 5 p = 0.06 There is no gender difference in the attributed risk factors for hearing loss.

Table 1
Socio-Demographic Characteristics of participants.

Parameter	Medical care received		Total	p value
	Yes	No	n = 155 (100%)	
	n = 121 (78.1%)	n = 34 (27.9%)		
Gender of participants				
Male	64(41.3%)	13(8.4%)	77(49.7%)	**p = 0.48**
Female	57(36.8%)	21(13.5%)	78(50.3%)	***gender of the child does not influence the care received**
Age range (years)				
6–8	27(17.5%)	4(2.5%)	31(20.0%)	p = 0.08
9–11	45(29.0%)	20(12.9%)	65(41.9%)	***age not related to the care received**
12–15	49(31.6%)	10(6.5%)	59(38.1%)	
Socio-economic status				
Low	68(43.9%)	34(21.9%)	102(65.8%)	p < 0.001
Middle	35(22.6%)	0(0.0%)	35(22.6%)	***Increase in hospital attendance with improved socio-economic status**
High	18(11.6%)	0(0.0%)	18(11.6%)	
Educational status				
None	15(9.7%)	3(1.9%)	18(11.6%)	p = 0.54
Primary	49(31.6%)	6(3.9%)	55(35.5%)	*parental educational level does not influence the choice of care
Secondary	24(15.5%)	11(7.1%)	35(22.6%)	
Tertiary	33(21.3%)	14(9.0%)	47(30.3%)	

Bold signifies that in African setting(NIGERIA) a male child is regarded as superior to female child, and the parents gives the the best care/ treatment that is available to the male child, but in this study there was no significant difference in the treatment received by the male child and female child, despite the cultural practices.