Sapientia Foundation Journal of Education, Sciences and Gender Studies (SFJESGS), Vol.7 No.4 December, 2025; pg. 1 – 10
ISSN: 2734-2522 (Print); ISSN: 2734-2514 (Online)

KNOWLEDGE, PERCEPTION AND ATTITUDE OF PARENTS TOWARDS EARLY INTERVENTION PROGRAMMES FOR PUPILS WITH HEARING IMPAIRMENT IN NIGERIA

BAYONLE EMMANUEL OLAOLUWA
Department of Special Education
University of Ibadan
&
SUNDAY ABIMBOLA ABODUNRIN, Ph.D
Department of Special Education
University of Ibadan
Abosabim@yahoo.com

ABSTRACT

This study explores parents' knowledge, perception, and attitudes towards early intervention programmes for pupils with hearing impairment in Lagos State, Nigeria. Using a survey research design, 100 parents were purposively selected, and data were collected through questionnaires analyzed with descriptive statistics. Findings revealed that parents had a high level of knowledge (Weighted Mean = 3.29), showing strong awareness of early intervention benefits, particularly for communication and language development. Perceptions were very positive (Weighted Mean = 3.43), recognizing early intervention as essential for academic success and reducing social isolation. Attitudes were also favorable (Weighted Mean = 3.38), with parents willing to enroll their children and recommend the programmes. The study recommends sustained government and non-governmental support, awareness campaigns, and parent-focused education to encourage early enrolment and enhance early intervention for children with hearing impairment.

Keywords: Knowledge, Perception, Attitude, Parents, Early Intervention, Hearing Impairment.

INTRODUCTION

Pupils with hearing impairment have less voice resolution, which impairs their capacity to learn and comprehend speech (Afolabi, 2019). Hearing impairment is the fourth most prevalent impairment in the world right now. Severe hearing impairment interferes with interpersonal interaction, psychological well-being, future academic and professional opportunities, financial independence, and quality of life. According to the World Health Organization (WHO, 2018), a hearing impairment of more than 30 dB in the better-hearing ear is considered to be severe for infants (between the ages of birth and 12 months) and pupils (0 to 14 years). However, lowering the threshold for hearing impairment also has a negative impact. For instance, youngsters with a hearing impairment of more than 26 dB may find it difficult to comprehend faint conversation or background noise (Neumann, Chadha, Tavartkiladze, and White, 2019). The number of people suffering from severe hearing impairment globally increased from 42 million in 1985 to 360 million in 2010. Over 7.5 million of these were kids under the age of five. According to the most recent estimates, there are about 466 million people in the globe who have permanent hearing impairment and are considered disabled. More than 6% of the world's population is made up of these people

(WHO, 2018).

Parental knowledge, perception, and attitudes towards early intervention programmes significantly influence their willingness to access and utilise these services. Parents who are well-informed about the benefits of early intervention are more likely to seek timely support for their pupils (Morales 2020). Conversely, misconceptions, cultural beliefs, and stigma surrounding disabilities often hinder parental engagement. In Lagos State, these challenges may be exacerbated by inadequate awareness campaigns, financial constraints, and limited availability of resources. Okpa, Ikpeme, Wilson, Obeten and Nwadike, (2020) revealed that cultural and social factors often dictate parental decisions regarding intervention programmes, creating barriers to early engagement. Parents' active participation is essential for the early identification of hearing impairment. Pupils' future choices are based on their understanding and views of hearing impairment. According to Ravi, Yerraguntla, Gunjawate, Rajashekhar, Lewis and Guddattu, (2016) the reason why kids are not identified early as having hearing impairment is because their parents are not aware of the condition. Mothers expressed confusion on important risk factors like jaundice, measles, and seizures. In addition, the majority of parents were said to be ignorant of the treatment options for hearing impairment (Ravi, Yerraguntla, Gunjawate, Rajashekhar, Lewis and Guddattu, 2016).

Hearing is essential for a child's language development, especially during the first two years of life. Normal hearing is necessary for the development of the brain and the capacity for learning because it supplies sufficient experience and knowledge. The effects of hearing impairment at this critical stage can be detrimental to linguistic, cognitive, social, and emotional development. Additionally, hearing impairment has a long-term societal cost because it impacts not only the individual who is affected (Ravi, Yerraguntla, Gunjawate, Rajashekhar, Lewis and Guddattu, 2016). The majority of people affected by hearing impairment are identified at an advanced stage and have limited access to investigative and management services, according to a statement from the (WHO, 2018) (Ravi, Yerraguntla, Gunjawate, Rajashekhar, Lewis and Guddattu, 2016). Because preventive, diagnostic, and management services are either unavailable or too expensive, hearing impairment is a serious concern in low-to middle-income nations (Sambah, Zhao and El-Lishani, 2020). The most effective strategy to lessen and reduce the consequences of hearing impairment during childhood is early intervention, in which families work closely with other professionals (Maluleke, Chiwutsi and Khoza-Shangase, 2021).

Over half of the participants in a study conducted in South Africa were unaware of the typical etiological variables that cause maternal behavior. According to the study, parents also held superstitious attitudes regarding hearing impairment and its treatment. Interestingly, parents were receptive to rehabilitative treatments at an early age and had a favorable outlook on newborn hearing screening. The socioeconomic status, education level of parents/caregivers, and where they live have a big influence on their knowledge and attitudes towards the condition.

Early intervention programmes are most successful when parents actively participate in the process, acting as advocates and collaborators in their pupils' education and development. For instance, Hadders-Algra, (2021) emphasizes the importance of parental involvement in enhancing the outcomes of early intervention efforts. This is particularly relevant in Lagos

State, where economic, social, and educational disparities may further complicate access to services. However, despite the critical role of parents, the level of their engagement in Lagos State remains underexplored, leaving a gap in understanding the factors influencing their knowledge, perception, and attitudes.

Early intervention programmes encompass a variety of services and supports aimed at identifying and addressing developmental delays or disabilities in young pupils as early as possible, ideally before the age of five. Early intervention is essential for kids with hearing impairment in order to foster the best possible language development, cognitive abilities, social skills, and academic success (Yoshinaga-Itano, 2003). Early intervention is based on the understanding that a child's early years are a crucial time for language development and auditory learning, during which neural plasticity is at its highest (Hadders-Algra, 2021) and Sharma, 2012). Newborn hearing screening, audiological tests, hearing aid fitting, cochlear implantation where appropriate, auditory-verbal therapy, speech-language therapy, sign language education, and parent education programmes are all common components of early intervention services for pupils with hearing impairment (Joint Committee on Infant Hearing [JCIH], 2019). These services are often multidisciplinary and include psychologists, social workers, special educators, speech and language pathologists, and audiologists

Early identification of infant hearing impairment and initiation of rehabilitation treatment are necessary to prevent these consequences. The chances of irreversible hearing impairment are reduced and the results of expressive language and speech are improved with early identification and treatment. Because schools are often auditory-verbal environments (Hall, Hall, and Caselli, 2019), a late diagnosis severely hinders learning and limits educational opportunities. The national NHS programme for early detection and intervention is a thorough, multidisciplinary one that concentrates on the early identification and treatment of hearing impairment. Following screening, the term early intervention refers to a family-centered approach to treatment and a thorough diagnostic evaluation. The Joint Committee on Infant Hearing (JCIH, 2007) and the Health Professions Council of South Africa (HPCSA) (Alam, Satterfield, Mason, and Deng, 2016) state that early intervention programmes are designed to identify and diagnose hearing impairment in infants and newborns and to provide these people with support as soon as possible.

This study, therefore, seeks to examine the knowledge, perception, and attitude of parents towards early intervention programmes for pupils with hearing impairments in Lagos State, Nigeria

METHODS

The study adopted survey research design. 100 samples were purposively selected from the target population which includes parents of pupils with hearing impairment. Questionnaire was used to collect data for the study. The data collected were analysed using descriptive statistics of frequency counts, percentages, mean and standard deviation. **RESULTS**

RESULTS

Answers to Research Questions

Research Question one: What is the level of knowledge that parents in Lagos State have about early intervention programs for pupils with hearing impairments?

Table 1 Level of knowledge that parents in Lagos State have about early intervention programs for pupils with hearing impairments

SN	**Items**	**SA**	**A**	**D**	**SD**	**Mean**	**St.d**
1	I am aware of what early intervention programs for hearing-impaired pupils entail.	45 (45%)	52 (52%)	3 (3%)	0	3.42	.554
2	I know the age at which early intervention should begin for pupils with hearing impairments	39 (39%)	52 (52%)	3 (3%)	6 (6%)	3.24	.780
3	I am familiar with the services provided by early intervention programs.	42 (42%)	46 (46%)	9 (9%)	3 (3%)	3.27	.750
4	I can identify centers that offer early intervention programs in Lagos State	35 (35%)	56 (56%)	6 (6%)	3 (3%)	3.23	.694
5	I understand the benefits of early intervention for hearing-impaired pupils	41 (41%)	55 (55%)	4 (4%)	0	3.37	.562
6	I have attended seminars or workshops on early intervention for children with hearing impairments.	47 (47%)	30 (30%)	20 (20%)	3 (3%)	3.21	.868
7	I have received information about early intervention programs from health or education professionals.	52 (52%)	39 (39%)	6 (6%)	3 (3%)	3.40	.739
8	I know how to access early intervention services for my child if needed.	50 (50%)	35 (35%)	12 (12%)	3 (3%)	3.32	.803
9	I am familiar with the role of audiologists and speech therapists in early intervention.	46 (46%)	41 (41%)	10 (10%)	3 (3%)	3.30	.772
10	I know that early intervention can help improve speech and language skills in hearing-impaired children.	59 (59%)	35 (35%)	6 (6%)	0	3.53	.611
11	I understand the difference between special education and early intervention.	46 (46%)	48 (48%)	6 (6%)	0	3.40	.603
12	I am aware of government support for early intervention programs in Lagos State.	48 (48%)	46 (46%)	6 (6%)	0	3.42	.606
13	I have interacted with parents whose children benefited from early intervention	28 (28%)	52 (52%)	8 (8%)	12 (12%)	2.96	.920
14	I have read materials (online or printed) about early intervention programs	16 (16%)	66 (66%)	15 (15%)	3 (3%)	2.95	.657
15	I feel confident discussing early intervention options with professionals.	42 (42%)	49 (49%)	9 (9%)	0	3.33	.637
Weighted Mean = 3.29					Threshold= 2.50		

Table 1 shows that the level of knowledge parents in Lagos State have about early intervention programs for pupils with hearing impairments is high (Weighted Average = 3.29), which is above the threshold of 2.50. The findings reveal that parents are generally aware of what early

intervention programs entail ($\bar{X}$ = 3.42), know the benefits of early intervention ($\bar{X}$ = 3.37), and understand that it can improve speech and language skills in hearing-impaired children ($\bar{X}$ = 3.53). Parents also showed strong familiarity with the roles of audiologists and speech therapists ($\bar{X}$ = 3.30), and many have received information from professionals ($\bar{X}$ = 3.40). However, lower scores were recorded in reading materials about early intervention ($\bar{X}$ = 2.95) and interacting with parents whose children benefited from such programs ($\bar{X}$ = 2.96). This suggests that while knowledge is generally high, exposure to peer learning and independent reading resources remains limited.

Research Question two: What are the perceptions of parents in Lagos State regarding the effectiveness and importance of early intervention programs for pupils with hearing impairments?

Table 2 Perceptions of parents in Lagos State regarding the effectiveness and importance of early intervention programs for pupils with hearing impairments

SN	Items	SA	A	D	SD	Mean	St,d
1	Early intervention programs are essential for the development of hearing-impaired children	35 (35%)	62 (62%)	3 (3%)	0	3.32	.530
2	Children who receive early intervention have better communication skills	62 (62%)	38 (38%)	0	0	3.62	.488
3	Early intervention helps children with hearing impairments perform better in school	53 (53%)	44 (44%)	3 (3%)	0	3.50	.560
4	Early intervention services should be provided as soon as a hearing impairment is detected	62 (62%)	38 (38%)	0	0	3.62	.488
5	Early intervention can help reduce the social isolation of hearing-impaired children	56 (56%)	41 (41%)	3 (3%)	0	3.50	.659
6	Early intervention programs are worth the investment of time and resources.	35 (35%)	60 (60%)	5 (5%)	0	3.30	.560
7	Parents should prioritize early intervention over waiting for school age	33 (33%)	62 (62%)	5 (5%)	0	3.28	.552
8	The earlier the intervention, the better the outcomes for the child	32 (32%)	68 (68%)	0	0	3.32	.469
9	Early intervention helps children integrate better into mainstream schools	38 (38%)	62 (62%)	0	0	3.38	.488
10	The government should increase funding for early intervention programs	52 (52%)	48 (48%)	0	0	3.52	.502
11	Community awareness of early intervention needs to improve	55 (55%)	45 (45%)	0	0	3.55	.500
12	Professional support in early intervention is usually effective	43 (43%)	48 (48%)	6 (6%)	3 (3%)	3.31	.720
13	Early intervention can positively impact the emotional well-being of children	56 (56%)	38 (38%)	6 (6%)	0	3.50	.611
14	There is enough evidence to prove the success of early intervention programs	31 (31%)	63 (63%)	6 (6%)	0	3.25	.557
15	Early intervention should be made compulsory for hearing-impaired pupils	51 (51%)	49 (49%)	0	0	3.51	.502
Weighted Mean = 3.43		Threshold = 2.50					

Table 2 shows that parents' perceptions regarding the effectiveness and importance of early intervention programs for hearing-impaired pupils are very positive (Weighted Average = 3.43), above the 2.50 threshold. Parents strongly believe that early intervention enhances communication skills ($\bar{X}$ = 3.62), improves school performance ($\bar{X}$ = 3.50), and should be

provided as soon as a hearing impairment is detected ($\bar{X}$ = 3.62). They also agreed that early intervention reduces social isolation ($\bar{X}$ = 3.50) and positively impacts emotional well-being ($\bar{X}$ = 3.50). Furthermore, there was strong support for government funding ($\bar{X}$ = 3.52) and increased community awareness ($\bar{X}$ = 3.55). However, the perception of having enough evidence to prove the success of early intervention programs scored comparatively lower ($\bar{X}$ = 3.25), indicating some room for strengthening public understanding of research-backed results

Research Question three: What are the attitudes of parents in Lagos State towards enrolling their pupils in early intervention programs for pupils with hearing impairments

Table 3 Attitudes of parents in Lagos State towards enrolling their pupils in early intervention programs for pupils with hearing impairments

SN	**Items**	**SA**	**A**	**D**	**SD**	**Mean**	**St.d**
1	I would enroll my child in an early intervention program if they had a hearing impairment	42 (42%)	58 (58%	0	0	3.42	.496
2	I believe early intervention would not stigmatize my child	40 (40%)	57 (57%)		3 (3%)	3.34	.639
3	I trust professionals who recommend early intervention	24 (24%)	61 (61%)	15 (15%)	0	3.09	.621
4	I am willing to make personal sacrifices to ensure my child gets early intervention	48 (48%)	44 (44%)	8 (8%)	0	3.40	.636
5	I believe cultural beliefs should not stop parents from seeking early intervention	28 (28%)	72 (72%)	0	0	3.28	.451
6	I am open to trying new approaches if they benefit my child	48 (48%)	52 (52%)	0	0	3.48	.502
7	I would recommend early intervention to other parents	34 (34%)	66 (66%)	0	0	3.34	.476
8	I am confident that early intervention programs are safe for children	56 (56%)	40 (40%)	4 (4%)	0	3.52	.577
9	I believe early intervention should be part of regular child healthcare	64 (64%)	36 (36%)	0	0	3.64	.482
10	I would attend parenting classes on early intervention if available	50 (50%)	47 (47%)	3 (3%)	0	3.44	.656
11	I support community-based programs that promote early intervention	46 (46%)	54 (54%)	0	0	3.46	.501
12	I think my family would support my decision to enroll a child in early intervention	44 (44%)	51 (51%)	5 (5%)	0	3.39	.584
13	I believe that delays in enrolling in early intervention can harm the child	40 (40%)	34 (34%)	14 (14%)	12 (12%)	3.02	1.015
14	I am not hesitant about seeking professional help for my child's hearing issues	46 (46%)	43 (43%)	11 (11%)	0	3.35	.672
15	I believe early intervention programs respect parents' values and decisions	46 (46%)	54 (54%)	0	0	3.46	.501
Weighted Mean = 3.38				Threshold = 2.50			

Table 3 shows that parents' attitudes towards enrolling their children in early intervention programs for hearing-impaired pupils are highly favorable (Weighted Average = 3.38), exceeding the 2.50 threshold. The majority of parents expressed willingness to enroll their child in such programs if needed ($\bar{X}$ = 3.42), make personal sacrifices to ensure access ($\bar{X}$ = 3.40), and recommend early intervention to other parents ($\bar{X}$ = 3.34). Parents also agreed that early intervention should be part of regular child healthcare ($\bar{X}$ = 3.64) and felt confident that such programs are safe ($\bar{X}$ = 3.52). A slightly lower mean was observed for the belief that delays can harm the child ($\bar{X}$ = 3.02), suggesting that not all parents fully appreciate the urgency of timely enrollment. Nonetheless, overall attitudes remain strongly supportive of early intervention

Discussion of Findings

The findings reveal that the level of knowledge parents in Lagos State have about early intervention programs for pupils with hearing impairments is high (Weighted Mean = 3.29), surpassing the threshold of 2.50. This suggests that most parents are well aware of what early intervention entails, the benefits it offers, and how to access these services. Specifically, high mean scores were recorded for awareness of early intervention programs, understanding that early intervention improves speech and language skills and familiarity with the benefits of early intervention. However, comparatively lower mean values were observed in areas such as reading materials on early intervention and interacting with other parents whose children have benefitted from such programs, indicating some gaps in independent knowledge acquisition and peer learning. These findings align with previous research that emphasizes the variability in parental knowledge and the factors influencing it. For instance, Servinc and Senkal (2021) found differences in awareness and comprehension between parents of children with cochlear implants who received family therapy and those who did not, suggesting that targeted support interventions can enhance parental understanding and, by extension, developmental outcomes for children. Similarly, Kulkarni and Gathoo (2017) highlighted that parental awareness is one of the four core factors alongside involvement, support, and unmet needs that determine the effectiveness of early intervention programs.

The results also indicate that parents in Lagos State have very positive perceptions regarding the effectiveness and importance of early intervention programs for pupils with hearing impairments (Weighted Mean = 3.43), well above the 2.50 threshold. Parents agreed strongly that early intervention improves communication skills, enhances school performance, reduces social isolation, and should be provided immediately upon detection of hearing impairment. There was also strong support for increased government funding and improving community awareness. These perceptions reflect a recognition of early intervention as a critical developmental and educational support system for children with hearing impairments. The positive outlook observed in this study resonates with Servinc and Senkal (2021), who found that targeted family therapy and support could improve developmental outcomes in children with hearing impairment, even though differences in awareness between parents who received therapy and those who did not were not clinically significant. This suggests that while initial perceptions may already be favorable, structured support can strengthen and sustain these beliefs over time. The results also align with broader evidence from the education sector. Chalise (2024) demonstrated that teachers' self-efficacy is closely tied to inclusive education practices, with higher self-efficacy linked to better learning environments and stronger recognition of the rights and needs of students with disabilities. While Chalise's

focus was on educators, the same principle may apply to parents those who feel more capable of understanding and navigating early intervention are likely to view it more positively and advocate for its implementation.

The results from the study also reveal that parents in Lagos State hold highly favorable attitudes towards enrolling their children in early intervention programs for hearing impairments (Weighted Mean = 3.38), exceeding the threshold of 2.50. Parents expressed strong willingness to enroll their child in early intervention if needed, to make personal sacrifices to ensure access, and to recommend early intervention to others. There was also high agreement that early intervention should be part of regular child healthcare and confidence that such programs are safe for children. However, the mean score for the belief that delays in enrollment can harm the child was relatively lower, suggesting that urgency in initiating early intervention is not fully appreciated by all parents. These positive attitudes align with Adeniyi (2021), who reported that students in South-West Nigeria perceived Deaf culture positively, with differences in attitude influenced by the onset of hearing impairment and parental hearing status. This underscores the idea that personal and family experiences shape openness to intervention programs, and in the Lagos context, such experiences may be contributing to the generally supportive stance observed. Ayas and Yaseen (2021) found that while a large proportion of parents in the UAE (86.2%) had positive attitudes toward using pediatric audiology services, knowledge gaps persisted, especially regarding causes of hearing impairment. This mirrors the present findings, where parents' willingness to engage with early intervention is high even though other sections of the study show that not all parents have comprehensive exposure to related educational resources.

Conclusion

This study investigates knowledge, perception, and attitudes of parents towards early intervention programs for pupils with hearing impairments in Lagos State. From the findings it was revealed that level of knowledge parents in Lagos State have about early intervention programs for pupils with hearing impairments is high. Also, the parents' perceptions regarding the effectiveness and importance of early intervention programs for hearing-impaired pupils are very positive and parents' attitudes towards enrolling their children in early intervention programs for hearing-impaired pupils are highly favorable

Recommendations

Based on the findings, the following recommendations are proffered:

1. Government agencies, NGOs, and health professionals should intensify sensitization efforts focusing on the urgency of early intervention, using community outreach, social media, and local language media channels.
2. Establish parent support groups and networks where parents of hearing-impaired children can share experiences, resources, and coping strategies.
3. Make early screening and intervention referrals a standard component of pediatric health visits in both public and private healthcare facilities.

REFERENCES

Afolabi, O. (2019). Assistive Technologies for Persons with Hearing Impairment: A Study in Lagos State. *Journal of Special Education and Disability*, 7. 1: 23-35.

Alam, S., Satterfield, A., Mason, C., and Deng, X. (2016). Progress in Standardization of

Reporting and Analysis of Data from Early Hearing Detection and Intervention (EHDI) Programs. *Journal of early hearing detection and intervention*, 1. 2: 2-7

Ayas, M., and Yaseen, H. (2021). Knowledge and attitudes of parents towards childhood hearing impairment and pediatric hearing services in Sharjah, United Arab Emirates. *International Journal of Environmental Research and Public Health*, *18*(12), 6188.

Ayas, M.; Yaseen, H. (2021). Knowledge and Attitudes of Parents towards Childhood Hearing Loss and Pediatric Hearing Services in Sharjah, United Arab Emirates. Int. J. Environ. Res. Public Health 2021, 18, 6188.https://doi.org/10.3390/ ijerph18126188.

Chalise, K. (2024). *Perceptions of Teachers toward Inclusive Education with a Focus on Hearing Impairment: A Quantitative Study* (Doctoral dissertation, Kathmandu University School of Education).

Ching, T., Scarinci, N., Marnane, V., King, J., Button, L., and Whitfield, J. (2018). Factors influencing parents' decisions about communication choices during early education of their child with hearing loss: a qualitative study. Deafness Educ Int.; 20(3-4): 154–181.

Eriks-Brophy, A., and Whittingham, J. (2013). Teachers' perceptions of the inclusion of pupils with hearing impairment in general education settings. *American annals of the deaf*, *158*(1), 63-97.

Hadders-Algra, M. (2021). Early diagnostics and early intervention in neurodevelopmental disorders—age-dependent challenges and opportunities. *Journal of clinical medicine*, *10*(4), 861.

Hall, M. L., Hall, W. C., and Caselli, N. K. (2019). Deaf pupils need language, not (just) speech. First Language, 39(4), 395. https://doi.org/10.1177/0142723719834102

Khan, N., Joseph, L., and Adhikari, M. (2018). The hearing screening experiences and practices of primary health care nurses: Indications for referral based on high-risk factors and community views about hearing loss. African Journal of Primary Health Care and Family Medicine; 10(1): 1-11.

Kiran, C. (2020). Perceptions of Teachers toward Inclusive Education Focus on Hearing Impairment. *International Journal of Educational and Pedagogical Sciences, 14 (11), 1140-1157. Accessed from https://bit. ly/487Kl8d*.

Kulkarni, K. A., and Gathoo, V. S. (2017). Parent empowerment in early intervention programmes of pupils with hearing impairment in Mumbai, India. *Disability, CBR and Inclusive Development*, *28*(2), 45-58.

Maluleke, N. P., Chiwutsi, R., and Khoza-Shangase, K. (2021). 11 Family-Centred Early Hearing Detection and Intervention. *Early detection and intervention in audiology*, 196.

National Information Center for Pupils and Youth with Disabilities (NICHCY) (2003). News Digest, (3rd Ed.).

Neumann, K., Chadha, S., Tavartkiladze, G.,Bu,X., and White, K. (2019). Newborn and Infant Hearing Screening Facing Globally Growing Numbers of People Suffering from Disabling Hearing Loss. International Journal of Neonatal Screening; 5(1): 1-11.

Okpa, J. T., Ikpeme, B. B., Wilson, N. U., Obeten, U. B., and Nwadike, N. C. (2022). Socio-demographic factors affecting access to and utilization of social welfare services in Nigeria. *Journal of Infrastructure, Policy and Development*, *6*(2), 1448.

Ravi, R., Yerraguntla, K., Gunjawate, D. R., Rajashekhar, B., Lewis, L. E., and Guddattu, V. (2016). Knowledge and attitude (KA) survey regarding infant hearing loss in Karnataka, India. *International journal of pediatric otorhinolaryngology*, *85*, 1-4.

Ries, P. W. (2024). The demography of hearing loss. In *Adjustment to adult hearing loss* (pp. 3-22). Routledge.

Sambah, I., Zhao, F., and El-Lishani, R. (2020). The Professional's experience with causes of delay in the diagnosis and management of pupils with a congenital hearing loss in Libya. *International Journal of Pediatric Otorhinolaryngology*, *128*, 109687.

Shah, N. A., and Bhatti, M. I. (2023). Deaf Culture as Locus of Religious Identity: Ethnographic Study of a Residential School for DEAF in Pakistan. *UW Journal of Social Sciences*, *6*(1), 1-10.

Shearer, A., Shen, J., Amr, S., Morton, C., and Smith, R. (2019). A proposal for comprehensive newborn hearing screening to improve identification of deaf and hard-of-hearing pupils. American College of Medical Genetics and Genomics; 21(11):2614-2630.

World Health Organization. (2018a). Prevention of Blindness and Deafness. Estimates. Global Estimates on Prevalence of Hearing Loss. online: http://www.who.int/pbd/deafness/estimates/en/ (accessed November 2018). Available on

Yoshinaga-Itano, C. (2003). From screening to early identification and intervention: Discovering predictors to successful outcomes for pupils with significant hearing loss. *Journal of deaf studies and deaf education*, *8*(1), 11-30.

Zaitoun, M., Rawashdeh, M., AlQudah, S., Nuseir, A., and Al-Tamimi, F. (2021). Knowledge and practice of hearing screening and hearing impairment management among ear, nose, and throat physicians in Jordan. *International Archives of Otorhinolaryngology*, *25*(01), e98-e107.