

FACTORS INFLUENCING HEARING LOSS AMONG ADOLESCENTS AND ADULTS IN FADA, KPAK DISTRICT OF KAGORO, KAURA LOCAL GOVERNMENT AREA OF KADUNA STATE

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ABSTRACT

The work is on the assessment of factor influencing hearing loss among Adolescents and Adults in Fada, Kagoro Kaura Local Government Area of Kaduna State. The ability to hear is critical to understanding the world around us as well as interacting with each other. Unfortunately, hearing impairment is the most frequent sensory deficit in human populations and affects both newborns, children, adults and the elderly regardless their socioeconomic statuses globally. This study was therefore initiated to examine the factors influencing hearing loss among adolescents and adults in Fada District of Kagoro. The works of prominent authors including the World Health Organization, Guilamo-Ramos, Litardo, and Jaccard, were reviewed in line with the study objectives. Research design was adopted where 293 participants in Fada District of Kagoro were sampled for the study. Percentages and frequencies were used in analyzing the data so obtained. The study also shows that availability of treatment options, provision and acceptance of hearing aids (88.74%), avoidance of ototoxic drugs 75.09% and change of attitude and knowledge on the case the cause of hearing loss 87.03% are the different ways adopted to prevent the problem of hearing loss in Fada, Kagoro Kaura Local Government Area of Kaduna State. The result further shows that the different ways of managing the health disorder associated with hearing loss in Fada Kagoro, Kaura Local Government Area of Kaduna Stat. acceptance of hearing aids (90.44%), cultural acceptance of the causes of hearing loss (88.74%) and early treatment of ear infection (85.32%). Also in relation to the types of hearing loss, all the items have 50% and above which means that the respondents agreed that mild 81.91% moderately severe 81.91 and moderate hearing loss are ones that mostly the types of hearing loss in Fada, Kagoro Kaura L.G.A of Kaduna State. It was recommended among others that Government should formulate policies that will ensure adequate sensitization on how to use social amenities such as phones and earpiece.

INTRODUCTION

The ability to hear is critical to understanding the world around us as well as interacting with each other. Globally, hearing impairment is the most frequent sensory deficit in human populations and affects both newborns, children, adults and the elderly regardless of their socioeconomic statuses (Becker, 2012). Safework Australia (2010) described hearing loss as a sudden or gradual reduction in the ability to hear clearly in one or both ears. Further stating that total or permanent hearing loss is rare and is usually partial and temporary. Wax blockage or an ear infection may cause temporary hearing loss. Similarly, ageing may result in partial, permanent hearing loss, which can sometimes be treated with surgery or with a hearing aid (Santos-Cortez & Chong (2014) & Plourde & Bloch (2016).

As pointed out by World Health Organization (Zhao (2015) & WHO, 2016) hearing loss is caused by many factors including environmental, cultural, social, economic, personal, genetical, medical and antenatal factors (Abdulraheem, Olamipo & Amodu (2012). In a review of factors affecting hearing loss, Mills and Going (1982) explain that the major non-genetic causes of sensorineural hearing-loss are exposure to noise, aging, ototoxic drugs, viral and bacterial infections and interactions between these factors. Regarding exposure to continuous noise, the database from laboratory and field studies indicates that a risk of hearing loss is present when noise levels exceed

75-80 dBA. As noise level, duration and number of exposures increase, so does risk of hearing loss. Recent studies proves that risk of hearing loss due to impulse noise increases as the peak SPL exceeds 145-155 dB and as the duration of the impulse increases, the number of impulses and the number of exposures increase, hence, high level acoustic impulses can cause severe, permanent hearing loss.

The Scenihr (2008) & (W.H.O 2014) reports revealed that bacterial and viral infections might also produce mild to severe hearing loss. With the development of rubella vaccine and Rhogan, Cytomegalovirus may have become the most common cause of congenital deafness. Ageing is also a major cause of hearing loss. Exposure to occupational and environmental noise, certain diseases and life styles (diet, stress, drugs) may interact with the specific effects of ageing. The result is moderate to severe hearing loss in a majority of older persons. Which may likely be the case with the present study.

Papel and Feldman (2011) & (W.H.O 2014) reported that over 5% of the world's population suffers from disabling hearing loss. Five percent may seem like a small number, but that totals over 360 million people across the globe. Asghari, Farhali, Daneshi, Khalbazhooh, Mohazzah-Terabi, Jalessi & Emamjomch (2017) & WHO (2018) estimated 466 million people with disabling hearing loss worldwide, where 93% of them are adults and 7% children. Among the adults, there are more males (56%) than females (44%) with disabling hearing loss. In view of these unpleasant outcomes, this study was initiated to examine the factors influencing hearing loss among adolescents and adults in Fada District of Kagoro, Kaura Local Government Area of Kaduna State.

Statement of the Problem

Hearing well is an essential component of human existence as it provides humans with two vital but very different senses, which is hearing and balance. Sound detected by ears provides essential information about our external surroundings and allows us to communicate in highly sophisticated ways, such as through speech and music. In addition, our ears contribute to our sense of balance, the largely unconscious understanding of the body's orientation in space that allows us to maintain an upright posture and move without falling over.

It is well established that a patient with a mild hearing impairment may have problems understanding speech, especially if there is a lot of noise around, while those with moderate deafness may need a hearing aid. Some people are severely deafened and rely on lip-reading to communicate with others. People who are profoundly deafened can hear nothing at all and can find him or herself very relying on lip-reading or sign language.

Worst still are people who have the following, trouble hearing over the telephone, find it hard to follow conversations when two or more people are talking, often ask people to repeat what they are saying, need to turn up the television volume so loud that others complain, a problem hearing because of background noise, think that others seem to mumble and cannot understand when women and children speak to you. If allowed to continue may end up being totally deafened which can affect individual's social development. Hence, the present study on Assessment of Factors Influencing Hearing Loss among Adolescents and Adults in Fada, Fada District of Kagoro, Kaura Local Government of Kaduna State.

Research Questions

To give direction to the study, the following research questions were stated.

1. What are the factors influencing hearing-loss adolescents and adult in Fada District of Kagoro?
2. What are the types of hearing-loss among adolescents and adults in Fada District of Kagoro?
3. What are the different ways adopted prevents the problems of hearing-loss among adolescents and adults in Fada District of Kagoro?
4. What are the ways of managing the health disorders associated with hearing-loss among adolescent and adults in Fada District of Kagoro?

METHODOLOGY

This study adopted a survey research design, for the purpose of describing the existing condition of the respondents as it related to hearing loss.

The study population comprised individuals above the age of 18 years. It was estimated that only those who attended health facilities within 3 months that had issues with hearing loss form the population and sample for the study and only 293 responded.

The instrument for the study was self-structured questionnaire designed to collect information from the respondents on factors influencing hearing loss. There were four sections in the instrument. Section A elicited information on factors influencing hearing loss and had 19 items. Section B sought for data on types of hearing loss and had 12 items. Section C, sought for information on different ways adopted in order to prevent problems on different ways adopted in order to prevent problems of hearing loss and had 17 items. Section D. elicited information on ways of managing health disorder associated with hearing loss and had 11 items. In all cases, the respondents were all expected to either respond to each item, using yes and no options.

Three experts in health sciences from the University of Jos checked the face and content validity of the instrument. All the observation made by the experts were affected on the instrument that was pretested using 20 patients in the study area that were not part of the main study.

In order to obtain reliability of the instrument, 20 patients that were not part of the main study were used for try testing the instrument. Cron Bach Alpha, Method of reliability, was used in analysing the data obtained which gave a reliability coefficient of 0.82 which was considered very good for the present study.

Results

Table 1 Factors Influencing Hearing Loss among Adolescent and Adults

S/No	Items	Yes		No	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Exposure to continues noise	245	83.62	23	7.50
2	Ototoxic drugs	250	85.32	21	7.17
3	Ageing	250	85.32	21	7.17
4	Tobacco consumption	276	78.50	41	13.99
5	Alcohol intake	255	87.03	21	7.17
6	Physical inactivity	205	69.97	40	13.65
7	Body Mass Index	235	80.20	44	15.02
8	Low income	215	73.38	50	17.06
9	Genetic Factors	260	88.74	23	7.50
10	Complications at birth	215	73.4	20	6.83
11	Infectious diseases	225	76.79	31	10.58
12	Chronic ear infection	235	80.20	15	5.12
13	Use of particular drugs	220	75.09	28	9.50
14	Cleaning of the ear with hard object	185	63.14	56	19.11
15	Insertion of earpiece	205	69.97	34	11.60
16	Frequent usage of ear phone	200	68.26	37	12.63
17	Prenatal causes from conception	210	71.67	40	13.65
18	Cultural beliefs	220	75.09	33	11.26

The result in Table1 shows that all the items have 50% and above, which means that respondents agreed that all the items mentioned were the factors responsible for hearing loss among adolescent and the adults in Fada District, Kagoro Kaura LGA.

Table 2 Types of Hearing Loss Among the Respondents

S/No	Items	Yes		No	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Conductive Hearing Loss				
	Mild	240	81.91	0	0.00
	Moderate	220	75.09	30	10.24
	Moderately Sever	240	81.91	25	8.53
	Sever (Profound)	205	69.97	30	10.24
2	SensorineuralHearing Loss				
	Mild	195	66.55	8	2.73
	Moderate	185	63.14	21	7.17
	Moderately Sever	170	58.02	180	61.43
	Sever (Profound)	170	58.02	180	61.43
3	Mixed Hearing Loss				
	Mild	185	63.14	12	4.10
	Moderate	205	69.97	15	5.12
	Moderately Sever	195	66.55	50	17.06
	Sever (Profound)	185	63.14	56	15.36

The result in Table 2 shows that all the items have 50% and above, which means that the respondents agreed that all the items mentioned were the types of hearing loss in Fada, Fada Kgoro, Kaura LGA, Kaduna State.

Table 3 Different ways adopted in order to prevent the problems of hearing loss in among the respondents.

S/N	Items	YES		NO	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Creating awareness through health education	210	71.67	0	0
2	Consistent check-up in the hospital	235	80.20	0	0
3	Early postnatal intervention services	245	83.62	10	3.4
4	Mandatory ears screening programs	222	76.79%	22	7.5
5	Availability of enough competent audiology professional	260	88.74	10	3.41
6	Change of attitude and knowledge on the causes of hearing loss	260	88.74	25	8.53
7	Avoidance of ototoxic medication	270	75.09	12	4.10
8	Avoidance of self-removal of foreign objects from the ear	255	87.03	5	1.7
9	Early treatment of ear infection	260	88.75	13	4.4
10	Sufficient physical activities	255	87.03	16	5.4
11	Avoidance of self-removal of foreign object from the ear	255	87.03	5	1.7
12	Availability of ear treatment options	255	87.03	18	6.14
13	Reduction of insertion of earpiece into the ear	270	75.09	12	4.6
14	Avoidance of tobacco consumption	210	71.67	18	6.14
15	Avoidance of alcohol intake	265	90.44	17	5.8

The result in Table 3 shows that all the items have 50% and above, which means that the respondents agreed that all the items mentioned were the different ways adopted in order to prevent the problems of hearing loss in Fada, Fada Kagoro, Kaura LGA, Kaduna State.

Table 4 Ways of Managing Disorder Associated with Hearing Loss

S/N	Items	YES		NO	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Early treatment of ear infection	250	85.32	0	0
2	Early intervention, screening and services	240	81.91	0	0
3	Provision of hearing aids	265	90.44	0	0
4	Acceptance of hearing aids	260	88.74	0	0
5	Availability of professionals on audiology services	225	76.79	10	3.41
6	Distribution of hearing aid capabilities	260	88.74	5	1.71
7	Reduction in the cost of hearing aids	170	58.02	110	37.54
8	Cultural acceptance of the causes of H/L & RT	260	88.74	22	7.51
9	Avoidance of alcohol intake	260	88.74	0	0
10	Avoidance of tobacco consumption	200	68.26	0	0
11	Strong policy on the reduction of continuous noise in the environment	255	87.03	5	1.7

The result in Table 4 shows that all the items have 50% and above, which means that the respondents agreed that all the items mentioned were the different ways of managing disorder associated with hearing loss except item 11 which is below 50% which states that strong policy on the reduction of continuous noise in the environment which had 240 (81.91%) as NO response in Fada, Fada Kagoro, Kaura LGA, Kaduna State.

DISCUSSION

The result shows that all the identified causes of hearing loss have 50% and above responses. This means that the respondents agreed that all the variables mentioned were the factors responsible for hearing loss among adolescents and adults in Fada Kagoro, Kaura L.G.A of Kaduna State. Results of this study are not surprising because many authors including World Health Organization (2018), and Boskey (2020) have found out that these factors are very common among individuals of different culture. Corroborating this fact, the World Health Organization (2018) identified factors including drug use, exposure to continuous noise, consumption of alcohol, lack of physical activities, Body Mass Index, complications at birth, genetic factors and infectious disease amongst others are some of the major causes of hearing loss (Abbas, Auta & Naiya, (2012). In addition, these things are very common and found everywhere in the society.

The result in table 2 shows that all the items have 50% and above. This means that the respondents agreed that all the items mentioned were the types of hearing-loss in Fada, Kagoro Kaura L.G.A of Kaduna State. However, conductive type of hearing loss had mild and moderately severe with 240 (81.91%) and as well as a moderate conductive with 220 (72.09%) were the commonest in the area. This result was not surprising because conductive type is as a result of exposure to continuous noisy environment and frequent use of ear phone which is very common with citizens of the study area. This is in line with what Asghari et al (2017) who expressed that exposure to noise can injure the inner ear and produce a sensorineural hearing-loss. The injury and hearing loss can be temporary or permanent. There are three types of hearing loss – sensorineural hearing loss, conductive hearing loss and mixed hearing loss.

Sensorineural hearing loss is the most common type of hearing loss. It occurs when the inner ear nerve and hair cells are damaged perhaps due to age, noise damage or something else. Sensorineural hearing-loss impacts the pathways from your inner ear to your brain. Most time, Sensorineural hearing-loss cannot be corrected medically or surgically, but can be treated and helped with the use of hearing aids.

Conductive hearing loss is typically the result of obstructions in the outer or middle ear – perhaps due to fluid, tumors, earwax or even ear formation. This obstruction prevents sound from getting to the inner ear. Conductive loss can often be treated surgically or with medicine.

Mixed hearing loss is just what is sound like a combination of Sensorineural and conductive hearing loss.

Degrees of hearing loss, mild, moderate, severe and profound mild- hear some speech sounds but have difficulty with soft sounds. Moderate – struggle to hear/understand speech when someone is talking at a normal level. Severe –hear little-to-no speech when spoken at normal levels, and hear only some loud sounds. Profound – only hear very loud sounds and no speech at all. Hearing loss is caused by many factors, most frequently form natural aging or exposure to loud noise.

The result in table 3 shows that all the items have 50% and above. This means that the respondents agreed that all the items mentioned were the different ways adopted in order to prevent the problems of hearing loss in Fada, Kagoro, Kaura L.G.A of Kaduna State.

These results were expected because early treatment of various ear infections with availability of treatment options and the people's acceptance of hearing-aids will help in the reduction of hearing loss in Fada, Kagoro, Kaura L.G.A Kaduna State. This in unit with what Zhao (2015) stated that therapeutic non-surgical management of pathogen associated hearing-loss currently focuses on two areas of intervention: specific antimicrobial therapies and anti-inflammatory therapies to mitigate the host's immune response to the infection and thereby reduce the damage to the cochlea with a better understanding of infectious disease related hearing loss, however,, novel therapies might emerge, such as use of free radical scavengers, anti-oxidant and none particle-based systems. Surgical treatment might be gap that is amenable to correction by surgical intervention. Examples of non-medical support are special education if Nigerians protect themselves by reducing their exposure to loud nose or wearing suitable protection such as ear muffs or ear plugs. Without any doubts, full reimbursement of hearing aids for all hearing impaired around the globe is the most humane solution. Unfortunately, it is very costly and only the upper class in Nigeria can afford it.

The result in Table 4 shows that all the items have 50% and above, which means that the respondents agreed that all the items mentioned were the different ways of managing disorder associated with hearing loss except item eleven (11) which was below 50% which states that strong policy on the reduction of continuous noise in the environment which had 240 (81.91%) as NO response in Fada, Fada Kagoro, Kaura LGA, Kaduna State. This result was expected because there is no any policy on ground to regulate noise continuous noisy environment in Nigeria. Due to this lack of policy Abdulraheem, et al (2012) express that in terms of policy, generating evidence concerning the critical variable associated with HL is an important step in designing targeted services and interventions. For individuals that face hearing health inequalities and especially for those in the lowest SEP groups, where the burden of HL falls highest. This is of Major importance for the population in England as sensor disease are the first leading cause of morbidity among adults, 70years and older and the second is a non-communicable disease, which can be prevented or ameliorated by the governmental policies to mitigate public health interventions to promote healthier lifestyles in middle age and older adults in England which also can be adopted in Nigeria. Thus, the incidence and severity of hearing loss in Fada District of Kagoro could be significantly reduced by the government policies to mitigate socioeconomic disparities and public health interventions to promote healthier lifestyle in middle-aged and older adults in Fada District of Kagoro. The occurrence of objective hearing data eliminated the different types of bias that occur in self-reporting hearing difficulties, strengthening the accuracy of findings.

CONCLUSION

Base on the results and discussion above it was concluded that different factors were responsible for hearing loss, the respondents suffered from the three major categories of hearing loss with their various levels. Due to this, the adopted different ways of preventing and managing the problem of hearing loss.

RECOMMENDATIONS

Base on the results, discussion and conclusions, it is recommended that;

1. The result that there were no outstanding policy that can take care of the menace, should be noted by the government at various levels and put in place the legislations take will provide amenities good for human intervention devoid of problems leading to ear disturbance.
2. Public health workers should note this and provide health talks, symposia, conferences etc on the dangers of social life leading to problems relating to hearing loss.

REFERENCES

- Asghari, A, Farhadi, M., Daneshi, A., Khabazkoob, M., Mohazzab-Torabi, S., Jalessi, M., & Emamjomeh, D.A. (2017). The Prevalence of Hearing Impairment by Age and Gender in a Population-based Study *Iran Journal of Public Health* 46(9): 1237-1246 available at <http://ijph.tums.ac.ir>
- Abbas, I.I., Auta, S.Z & Na'iya, R.M. (2012), Health Care Facilities Mapping and Database Creation Using GIS in Chikun Local Government, Kaduna State, Nigeria. *Global Journal of Human Social Science Geography and Environmental Geosciences* vol.12, issue.10
- Abdulraheem, I.S, Olapipo, A.R & Amodu, M.O. (2012), Primary Health Care Services In Nigeria: Critical Issues and Strategies for enhancing the Use by the Rural Communities *Journal of Public Health and Epidemiology* Vol. 4(1) pp. 5- 13 ISSN: 2141-2316 <http://www.academicjournals.org/JPHE/DOI:10.5897>
- Becker F.O. (2012). The Health Belief Model as an Explanatory framework in Communication Research.
- Plourde, A. R. and Bloch, E. M. (2016) 'A Literature Review of Zika Virus', 22(7), pp. 1185–1192. doi: 10.3201/eid2207.151990.
- Poushter, J. et al. (2016) 'Smartphone ownership and Internet usage continues to climb in emerging economies.', Pew Research Center.
- Patel, H. &Feldman, M. (2011) 'Universal newborn hearing screening.', *Paediatrics& child health*, 16(5), pp. 301–10. doi: 10.1055/s-0031-1285900. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3114997&tool=pmcentrez>
- Santos-Cortez, R. L. P. &Chiong, C. M. (2014) 'Cost-Analysis of Universal Newborn Hearing Screening in the Philippines', *ActaMedicaPhillipina*, pp. 52–57. <http://actamedicaphilippina.com.ph/content/cost-analysis-universal-newborn-hearing->
- Safe Work Australia (2010) Key Work Health and Safety Statistics, Australia. Available at: https://www.safeworkaustralia.gov.au/system/files/documents/1702/key_work_health_safety
- Scenihr (2008) 'Potential health risks of exposure to noise from personal music players and

mobile phones including a music playing function', Scientific Committee on Emerging and Newly Identified Health Risks, (September), p. 81.
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_018.pdf.
<http://www.noiseandhealth.org/text.asp?2012/14/61/274/104893>.

UNICEF (2007) *the state of the world's children 2007* New York, UNICEF; 2007

World Health Organization (2018) Addressing the rising prevalence of hearing loss Geneva: Licence: CC BY-NC-SA 3.0 IGO.

World Health Organization (2016), Medication Errors: Technical Series on Safer Primary Care ISBN 978-92-4-151164-3

WHO, Fact Sheets: non-communicable diseases, (2015). Retrieved from Available; <https://www.who.int/topics/noncommunicabledisease/factsheets/en/>

Zhao F, (2015) Exploring the Influence of Culture on Hearing Help-Seeking and Hearing-aid Uptake *International Journal of Audiology* 11:19